Raymond Arvidson

List of Publications by Year
in descending order

107 papers	17,254 citations	14614 66 h-index	30848 102 g-index
108 all docs	108 docs citations	108 times ranked	5371 citing authors

#	Article	IF	Citations
1	Canyon Wall and Floor Debris Deposits in Aeolis Mons, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	2
2	CRISMâ€Based High Spatial Resolution Thermal Inertia Mapping Along Curiosity's Traverses in Gale Crater. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	11
3	Surface Kinetic Temperatures and Nontronite Single Scattering Albedo Spectra From Mars Reconnaissance Orbiter CRISM Hyperspectral Imaging Data Over Glen Torridon, Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	11
4	Orbital Observations of a Marker Horizon at Gale Crater. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	5
5	Orbital and Inâ€Situ Investigation of Periodic Bedrock Ridges in Glen Torridon, Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	18
6	Geology and Geochemistry of Noachian Bedrock and Alteration Events, Meridiani Planum, Mars: MER Opportunity Observations. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006915.	1.5	6
7	Evidence for a Diagenetic Origin of Vera Rubin Ridge, Gale Crater, Mars: Summary and Synthesis of Curiosity's Exploration Campaign. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006527.	1.5	69
8	Synergistic Ground and Orbital Observations of Iron Oxides on Mt. Sharp and Vera Rubin Ridge. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006294.	1.5	27
9	Degradation of Endeavour Crater Based on Orbital and Roverâ€Based Observations in Combination With Landscape Evolution Modeling. Journal of Geophysical Research E: Planets, 2019, 124, 1472-1494.	1.5	3
10	Overview of Spirit Microscopic Imager Results. Journal of Geophysical Research E: Planets, 2019, 124, 528-584.	1.5	4
11	Quantitative Reconstruction and Denoising Method HyBER for Hyperspectral Image Data and Its Application to CRISM. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2019, 12, 1219-1230.	2.3	14
12	Visible to Short-Wave Infrared Spectral Analyses of Mars from Orbit Using CRISM and OMEGA. , 2019, , 453-483.		6
13	Diverse Lithologies and Alteration Events on the Rim of Noachianâ€Aged Endeavour Crater, Meridiani Planum, Mars: In Situ Compositional Evidence. Journal of Geophysical Research E: Planets, 2018, 123, 1255-1306.	1.5	28
14	Retrieval of Compositional Endâ€Members From Mars Exploration Rover Opportunity Observations in a Soilâ€Filled Fracture in Marathon Valley, Endeavour Crater Rim. Journal of Geophysical Research E: Planets, 2018, 123, 278-290.	1.5	11
15	Sand Mineralogy Within the Bagnold Dunes, Gale Crater, as Observed In Situ and From Orbit. Geophysical Research Letters, 2018, 45, 9488-9497.	1.5	52
16	Martian Habitability as Inferred From Landed Mission Observations. , 2018, , 77-126.		5
17	Mars Science Laboratory Curiosity Rover Megaripple Crossings up to Sol 710 in Gale Crater. Journal of Field Robotics, 2017, 34, 495-518.	3.2	82
18	Compositional variations in sands of the Bagnold Dunes, Gale crater, Mars, from visibleâ€shortwave infrared spectroscopy and comparison with ground truth from the Curiosity rover. Journal of Geophysical Research E: Planets, 2017, 122, 2489-2509.	1.5	64

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19	The structural, stratigraphic, and paleoenvironmental record exposed on the rim and walls of Iazu Crater, Mars. Journal of Geophysical Research E: Planets, 2017, 122, 1138-1156.	1.5	6
20	Chemistry, mineralogy, and grain properties at Namib and High dunes, Bagnold dune field, Gale crater, Mars: A synthesis of Curiosity rover observations. Journal of Geophysical Research E: Planets, 2017, 122, 2510-2543.	1.5	95
21	Regularization of Mars Reconnaissance Orbiter CRISM alongâ€track oversampled hyperspectral imaging observations of Mars. Icarus, 2017, 282, 136-151.	1.1	27
22	Oxidation of manganese in an ancient aquifer, Kimberley formation, Gale crater, Mars. Geophysical Research Letters, 2016, 43, 7398-7407.	1.5	110
23	High concentrations of manganese and sulfur in deposits on Murray Ridge, Endeavour Crater, Mars. American Mineralogist, 2016, 101, 1389-1405.	0.9	55
24	The stratigraphy and evolution of lower Mount Sharp from spectral, morphological, and thermophysical orbital data sets. Journal of Geophysical Research E: Planets, 2016, 121, 1713-1736.	1.5	123
25	Smectite deposits in Marathon Valley, Endeavour Crater, Mars, identified using CRISM hyperspectral reflectance data. Geophysical Research Letters, 2016, 43, 4885-4892.	1.5	39
26	Esperance: Multiple episodes of aqueous alteration involving fracture fills and coatings at Matijevic Hill, Mars. American Mineralogist, 2016, 101, 1515-1526.	0.9	19
27	LOCALIZED AND AREALLY EXTENSIVE ALTERATIONS IN MARATHON VALLEY, ENDEAVOUR CRATER RIM, MARS. , 2016, , .		3
28	Mars Reconnaissance Orbiter and Opportunity observations of the Burns formation: Crater hopping at Meridiani Planum. Journal of Geophysical Research E: Planets, 2015, 120, 429-451.	1.5	30
29	Context of ancient aqueous environments on Mars from in situ geologic mapping at Endeavour Crater. Journal of Geophysical Research E: Planets, 2015, 120, 538-569.	1.5	37
30	Deposition, exhumation, and paleoclimate of an ancient lake deposit, Gale crater, Mars. Science, 2015, 350, aac7575.	6.0	471
31	Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1245267.	6.0	323
32	Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1244734.	6.0	246
33	Ancient Aqueous Environments at Endeavour Crater, Mars. Science, 2014, 343, 1248097.	6.0	176
34	Mineralogy of the MSL Curiosity landing site in Gale crater as observed by MRO/CRISM. Geophysical Research Letters, 2014, 41, 4880-4887.	1.5	59
35	Overview of the Mars Science Laboratory mission: Bradbury Landing to Yellowknife Bay and beyond. Journal of Geophysical Research E: Planets, 2014, 119, 1134-1161.	1.5	104
36	Sands at Gusev Crater, Mars. Journal of Geophysical Research E: Planets, 2014, 119, 941-967.	1.5	19

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37	A hematite-bearing layer in Gale Crater, Mars: Mapping and implications for past aqueous conditions. Geology, 2013, 41, 1103-1106.	2.0	113
38	Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover. Science, 2013, 341, 1238937.	6.0	367
39	Martian Fluvial Conglomerates at Gale Crater. Science, 2013, 340, 1068-1072.	6.0	326
40	The Petrochemistry of Jake_M: A Martian Mugearite. Science, 2013, 341, 1239463.	6.0	134
41	Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. Science, 2013, 341, 1238670.	6.0	215
42	Ancient Impact and Aqueous Processes at Endeavour Crater, Mars. Science, 2012, 336, 570-576.	6.0	176
43	Opportunity Mars Rover mission: Overview and selected results from Purgatory ripple to traverses to Endeavour crater. Journal of Geophysical Research, 2011, 116, .	3.3	106
44	Field reconnaissance geologic mapping of the Columbia Hills, Mars, based on Mars Exploration Rover Spirit and MRO HiRISE observations. Journal of Geophysical Research, 2011, 116, .	3.3	24
45	Characteristics, distribution, origin, and significance of opaline silica observed by the Spirit rover in Gusev crater, Mars. Journal of Geophysical Research, 2011, 116, .	3.3	155
46	Identification of Carbonate-Rich Outcrops on Mars by the Spirit Rover. Science, 2010, 329, 421-424.	6.0	358
47	Stratigraphy of hydrated sulfates in the sedimentary deposits of Aram Chaos, Mars. Journal of Geophysical Research, 2010, 115, .	3.3	74
48	Spectral and stratigraphic mapping of hydrated sulfate and phyllosilicateâ€bearing deposits in northern Sinus Meridiani, Mars. Journal of Geophysical Research, 2010, 115, .	3.3	73
49	Microscopy analysis of soils at the Phoenix landing site, Mars: Classification of soil particles and description of their optical and magnetic properties. Journal of Geophysical Research, 2010, 115, .	3.3	38
50	Early Mars hydrology: Meridiani playa deposits and the sedimentary record of Arabia Terra. Journal of Geophysical Research, 2010, 115, .	3.3	148
51	Spirit Mars Rover Mission: Overview and selected results from the northern Home Plate Winter Haven to the side of Scamander crater. Journal of Geophysical Research, 2010, 115, .	3.3	127
52	Exploration of Victoria Crater by the Mars Rover Opportunity. Science, 2009, 324, 1058-1061.	6.0	141
53	H ₂ O at the Phoenix Landing Site. Science, 2009, 325, 58-61.	6.0	500
54	Phyllosilicates and sulfates at Endeavour Crater, Meridiani Planum, Mars. Geophysical Research Letters, 2009, 36, .	1.5	88

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55	A synthesis of Martian aqueous mineralogy after 1 Mars year of observations from the Mars Reconnaissance Orbiter. Journal of Geophysical Research, 2009, 114, .	3.3	445
56	Evidence for the origin of layered deposits in Candor Chasma, Mars, from mineral composition and hydrologic modeling. Journal of Geophysical Research, 2009, 114, .	3.3	159
57	Compact Reconnaissance Imaging Spectrometer for Mars investigation and data set from the Mars Reconnaissance Orbiter's primary science phase. Journal of Geophysical Research, 2009, 114, .	3.3	178
58	Mineralogy of Terra Meridiani and western Arabia Terra from OMEGA/MEx and implications for their formation. Icarus, 2008, 195, 106-130.	1.1	85
59	Columbia Hills, Mars: Aeolian features seen from the ground and orbit. Journal of Geophysical Research, 2008, 113, .	3.3	46
60	Structure, stratigraphy, and origin of Husband Hill, Columbia Hills, Gusev Crater, Mars. Journal of Geophysical Research, 2008, 113, .	3.3	44
61	Phyllosilicate and sulfateâ€hematite deposits within Miyamoto crater in southern Sinus Meridiani, Mars. Geophysical Research Letters, 2008, 35, .	1.5	63
62	Surface processes recorded by rocks and soils on Meridiani Planum, Mars: Microscopic Imager observations during Opportunity's first three extended missions. Journal of Geophysical Research, 2008, 113, .	3.3	39
63	Lightâ€toned salty soils and coexisting Siâ€rich species discovered by the Mars Exploration Rover Spirit in Columbia Hills. Journal of Geophysical Research, 2008, 113, .	3.3	108
64	Spirit Mars Rover Mission to the Columbia Hills, Gusev Crater: Mission overview and selected results from the Cumberland Ridge to Home Plate. Journal of Geophysical Research, 2008, 113, .	3.3	99
65	Geochemical properties of rocks and soils in Gusev Crater, Mars: Results of the Alpha Particle Xâ€Ray Spectrometer from Cumberland Ridge to Home Plate. Journal of Geophysical Research, 2008, 113, .	3.3	162
66	Iron mineralogy and aqueous alteration from Husband Hill through Home Plate at Gusev Crater, Mars: Results from the MÃ¶ssbauer instrument on the Spirit Mars Exploration Rover. Journal of Geophysical Research, 2008, 113, .	3.3	162
67	Rock spectral classes observed by the Spirit Rover's Pancam on the Gusev Crater Plains and in the Columbia Hills. Journal of Geophysical Research, 2008, 113, .	3.3	37
68	Detection of Silica-Rich Deposits on Mars. Science, 2008, 320, 1063-1067.	6.0	399
69	Visible to near-IR multispectral orbital observations of Mars. , 2008, , 169-192.		8
70	Martian surface properties from joint analysis of orbital, Earth-based, and surface observations. , 2008, , 468-498.		35
71	Evidence for montmorillonite or its compositional equivalent in Columbia Hills, Mars. Journal of Geophysical Research, 2007, 112, .	3.3	81
72	Geologic and spectral mapping of etched terrain deposits in northern Meridiani Planum. Journal of Geophysical Research, 2007, 112, .	3.3	36

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73	Overview of the Opportunity Mars Exploration Rover Mission to Meridiani Planum: Eagle Crater to Purgatory Ripple. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	149
74	Characterization and petrologic interpretation of olivine-rich basalts at Gusev Crater, Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	227
75	Gusev crater: Wind-related features and processes observed by the Mars Exploration Rover Spirit. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	140
76	Spectrophotometric properties of materials observed by Pancam on the Mars Exploration Rovers: 1. Spirit. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	49
77	In situ and experimental evidence for acidic weathering of rocks and soils on Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	169
78	Geochemical and mineralogical indicators for aqueous processes in the Columbia Hills of Gusev crater, Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	234
79	Rocks of the Columbia Hills. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	146
80	Overview of the Microscopic Imager Investigation during Spirit's first 450 sols in Gusev crater. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	64
81	MÃ¶ssbauer mineralogy of rock, soil, and dust at Gusev crater, Mars: Spirit's journey through weakly altered olivine basalt on the plains and pervasively altered basalt in the Columbia Hills. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	314
82	Nature and origin of the hematite-bearing plains of Terra Meridiani based on analyses of orbital and Mars Exploration rover data sets. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	144
83	Erosion rates at the Mars Exploration Rover landing sites and long-term climate change on Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	215
84	Spectrophotometric properties of materials observed by Pancam on the Mars Exploration Rovers: 2. Opportunity. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	36
85	Global Mineralogical and Aqueous Mars History Derived from OMEGA/Mars Express Data. Science, 2006, 312, 400-404.	6.0	1,395
86	MÃ¶ssbauer mineralogy of rock, soil, and dust at Meridiani Planum, Mars: Opportunity's journey across sulfate-rich outcrop, basaltic sand and dust, and hematite lag deposits. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	225
87	An integrated view of the chemistry and mineralogy of martian soils. Nature, 2005, 436, 49-54.	13.7	348
88	Water alteration of rocks and soils on Mars at the Spirit rover site in Gusev crater. Nature, 2005, 436, 66-69.	13.7	240
89	Phyllosilicates on Mars and implications for early martian climate. Nature, 2005, 438, 623-627.	13.7	825
90	Stratigraphy and sedimentology of a dry to wet eolian depositional system, Burns formation, Meridiani Planum, Mars. Earth and Planetary Science Letters, 2005, 240, 11-72.	1.8	496

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91	Soils of Eagle Crater and Meridiani Planum at the Opportunity Rover Landing Site. Science, 2004, 306, 1723-1726.	6.0	153
92	Jarosite and Hematite at Meridiani Planum from Opportunity's MÃ¶ssbauer Spectrometer. Science, 2004, 306, 1740-1745.	6.0	733
93	Pancam Multispectral Imaging Results from the Spirit Rover at Gusev Crater. Science, 2004, 305, 800-806.	6.0	153
94	Pancam Multispectral Imaging Results from the Opportunity Rover at Meridiani Planum. Science, 2004, 306, 1703-1709.	6.0	135
95	Mineralogy at Gusev Crater from the Mossbauer Spectrometer on the Spirit Rover. Science, 2004, 305, 833-836.	6.0	279
96	In Situ Evidence for an Ancient Aqueous Environment at Meridiani Planum, Mars. Science, 2004, 306, 1709-1714.	6.0	845
97	Localization and Physical Property Experiments Conducted by Opportunity at Meridiani Planum. Science, 2004, 306, 1730-1733.	6.0	130
98	Localization and Physical Properties Experiments Conducted by Spirit at Gusev Crater. Science, 2004, 305, 821-824.	6.0	166
99	The Spirit Rover's Athena Science Investigation at Gusev Crater, Mars. Science, 2004, 305, 794-799.	6.0	404
100	Basaltic Rocks Analyzed by the Spirit Rover in Gusev Crater. Science, 2004, 305, 842-845.	6.0	244
101	Mars Exploration Rover mission. Journal of Geophysical Research, 2003, 108, .	3.3	102
102	Rock Abrasion Tool: Mars Exploration Rover mission. Journal of Geophysical Research, 2003, 108, .	3.3	131
103	Selection of the Mars Exploration Rover landing sites. Journal of Geophysical Research, 2003, 108, .	3.3	155
104	Athena Mars rover science investigation. Journal of Geophysical Research, 2003, 108, .	3.3	233
105	Geologic setting and origin of Terra Meridiani hematite deposit on Mars. Journal of Geophysical Research, 2002, 107, 18-1.	3.3	168
106	Correspondence and least squares analyses of soil and rock compositions for the Viking Lander 1 and Pathfinder landing sites. Journal of Geophysical Research, 2000, 105, 29207-29221.	3.3	25
107	Wind-blown streaks, splotches, and associated craters on Mars: Statistical analysis of Mariner 9 photographs. Icarus, 1974, 21, 12-27.	1.1	73