

Raymond Arvidson

List of Publications by Year in descending order

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107
papers

17,254
citations

14655

66
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30922

102
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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, . | 3.6 | 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, . | 3.6 | 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, . | 3.6 | 11 |
| 4 | Orbital Observations of a Marker Horizon at Gale Crater. Journal of Geophysical Research E: Planets, 2022, 127, . | 3.6 | 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, . | 3.6 | 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. | 3.6 | 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. | 3.6 | 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. | 3.6 | 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. | 3.6 | 3 |
| 10 | Overview of Spirit Microscopic Imager Results. Journal of Geophysical Research E: Planets, 2019, 124, 528-584. | 3.6 | 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. | 4.9 | 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. | 3.6 | 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. | 3.6 | 11 |
| 15 | Sand Mineralogy Within the Bagnold Dunes, Gale Crater, as Observed In Situ and From Orbit. Geophysical Research Letters, 2018, 45, 9488-9497. | 4.0 | 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. | 6.0 | 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. | 3.6 | 64 |

| # | ARTICLE | IF | CITATIONS |
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| 19 | The structural, stratigraphic, and paleoenvironmental record exposed on the rim and walls of Iazu Crater, Mars. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 1138-1156. | 3.6 | 6 |
| 20 | Chemistry, mineralogy, and grain properties at Namib and High dunes, Bagnold dune field, Gale crater, Mars: A synthesis of Curiosity rover observations. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 2510-2543. | 3.6 | 95 |
| 21 | Regularization of Mars Reconnaissance Orbiter CRISM along-track oversampled hyperspectral imaging observations of Mars. <i>Icarus</i> , 2017, 282, 136-151. | 2.5 | 27 |
| 22 | Oxidation of manganese in an ancient aquifer, Kimberley formation, Gale crater, Mars. <i>Geophysical Research Letters</i> , 2016, 43, 7398-7407. | 4.0 | 110 |
| 23 | High concentrations of manganese and sulfur in deposits on Murray Ridge, Endeavour Crater, Mars. <i>American Mineralogist</i> , 2016, 101, 1389-1405. | 1.9 | 55 |
| 24 | The stratigraphy and evolution of lower Mount Sharp from spectral, morphological, and thermophysical orbital data sets. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 1713-1736. | 3.6 | 123 |
| 25 | Smectite deposits in Marathon Valley, Endeavour Crater, Mars, identified using CRISM hyperspectral reflectance data. <i>Geophysical Research Letters</i> , 2016, 43, 4885-4892. | 4.0 | 39 |
| 26 | Esperance: Multiple episodes of aqueous alteration involving fracture fills and coatings at Matijevec Hill, Mars. <i>American Mineralogist</i> , 2016, 101, 1515-1526. | 1.9 | 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. <i>Journal of Geophysical Research E: Planets</i> , 2015, 120, 429-451. | 3.6 | 30 |
| 29 | Context of ancient aqueous environments on Mars from in situ geologic mapping at Endeavour Crater. <i>Journal of Geophysical Research E: Planets</i> , 2015, 120, 538-569. | 3.6 | 37 |
| 30 | Deposition, exhumation, and paleoclimate of an ancient lake deposit, Gale crater, Mars. <i>Science</i> , 2015, 350, aac7575. | 12.6 | 471 |
| 31 | Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars. <i>Science</i> , 2014, 343, 1245267. | 12.6 | 323 |
| 32 | Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. <i>Science</i> , 2014, 343, 1244734. | 12.6 | 246 |
| 33 | Ancient Aqueous Environments at Endeavour Crater, Mars. <i>Science</i> , 2014, 343, 1248097. | 12.6 | 176 |
| 34 | Mineralogy of the MSL Curiosity landing site in Gale crater as observed by MRO/CRISM. <i>Geophysical Research Letters</i> , 2014, 41, 4880-4887. | 4.0 | 59 |
| 35 | Overview of the Mars Science Laboratory mission: Bradbury Landing to Yellowknife Bay and beyond. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 1134-1161. | 3.6 | 104 |
| 36 | Sands at Gusev Crater, Mars. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 941-967. | 3.6 | 19 |

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|----|--|------|-----------|
| 37 | A hematite-bearing layer in Gale Crater, Mars: Mapping and implications for past aqueous conditions. <i>Geology</i> , 2013, 41, 1103-1106. | 4.4 | 113 |
| 38 | Volatile, Isotope, and Organic Analysis of Martian Finest with the Mars Curiosity Rover. <i>Science</i> , 2013, 341, 1238937. | 12.6 | 367 |
| 39 | Martian Fluvial Conglomerates at Gale Crater. <i>Science</i> , 2013, 340, 1068-1072. | 12.6 | 326 |
| 40 | The Petrochemistry of Jake_M: A Martian Mugarite. <i>Science</i> , 2013, 341, 1239463. | 12.6 | 134 |
| 41 | Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. <i>Science</i> , 2013, 341, 1238670. | 12.6 | 215 |
| 42 | Ancient Impact and Aqueous Processes at Endeavour Crater, Mars. <i>Science</i> , 2012, 336, 570-576. | 12.6 | 176 |
| 43 | Opportunity Mars Rover mission: Overview and selected results from Purgatory ripple to traverses to Endeavour crater. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2011, 116, . | 3.3 | 24 |
| 45 | Characteristics, distribution, origin, and significance of opaline silica observed by the Spirit rover in Gusev crater, Mars. <i>Journal of Geophysical Research</i> , 2011, 116, . | 3.3 | 155 |
| 46 | Identification of Carbonate-Rich Outcrops on Mars by the Spirit Rover. <i>Science</i> , 2010, 329, 421-424. | 12.6 | 358 |
| 47 | Stratigraphy of hydrated sulfates in the sedimentary deposits of Aram Chaos, Mars. <i>Journal of Geophysical Research</i> , 2010, 115, . | 3.3 | 74 |
| 48 | Spectral and stratigraphic mapping of hydrated sulfate and phyllosilicate-bearing deposits in northern Sinus Meridiani, Mars. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2010, 115, . | 3.3 | 38 |
| 50 | Early Mars hydrology: Meridiani playa deposits and the sedimentary record of Arabia Terra. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2010, 115, . | 3.3 | 127 |
| 52 | Exploration of Victoria Crater by the Mars Rover Opportunity. <i>Science</i> , 2009, 324, 1058-1061. | 12.6 | 141 |
| 53 | H ₂ O at the Phoenix Landing Site. <i>Science</i> , 2009, 325, 58-61. | 12.6 | 500 |
| 54 | Phyllosilicates and sulfates at Endeavour Crater, Meridiani Planum, Mars. <i>Geophysical Research Letters</i> , 2009, 36, . | 4.0 | 88 |

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| 55 | A synthesis of Martian aqueous mineralogy after 1 Mars year of observations from the Mars Reconnaissance Orbiter. <i>Journal of Geophysical Research</i> , 2009, 114, . | 3.3 | 445 |
| 56 | Evidence for the origin of layered deposits in Candor Chasma, Mars, from mineral composition and hydrologic modeling. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2009, 114, . | 3.3 | 178 |
| 58 | Mineralogy of Terra Meridiani and western Arabia Terra from OMEGA/MEx and implications for their formation. <i>Icarus</i> , 2008, 195, 106-130. | 2.5 | 85 |
| 59 | Columbia Hills, Mars: Aeolian features seen from the ground and orbit. <i>Journal of Geophysical Research</i> , 2008, 113, . | 3.3 | 46 |
| 60 | Structure, stratigraphy, and origin of Husband Hill, Columbia Hills, Gusev Crater, Mars. <i>Journal of Geophysical Research</i> , 2008, 113, . | 3.3 | 44 |
| 61 | Phyllosilicate and sulfate-hematite deposits within Miyamoto crater in southern Sinus Meridiani, Mars. <i>Geophysical Research Letters</i> , 2008, 35, . | 4.0 | 63 |
| 62 | Surface processes recorded by rocks and soils on Meridiani Planum, Mars: Microscopic Imager observations during Opportunity's first three extended missions. <i>Journal of Geophysical Research</i> , 2008, 113, . | 3.3 | 39 |
| 63 | Light-toned salty soils and coexisting Si-rich species discovered by the Mars Exploration Rover Spirit in Columbia Hills. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2008, 113, . | 3.3 | 99 |
| 65 | Geochemical properties of rocks and soils in Gusev Crater, Mars: Results of the Alpha Particle X-Ray Spectrometer from Cumberland Ridge to Home Plate. <i>Journal of Geophysical Research</i> , 2008, 113, . | 3.3 | 162 |
| 66 | Iron mineralogy and aqueous alteration from Husband Hill through Home Plate at Gusev Crater, Mars: Results from the Mössbauer instrument on the Spirit Mars Exploration Rover. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2008, 113, . | 3.3 | 37 |
| 68 | Detection of Silica-Rich Deposits on Mars. <i>Science</i> , 2008, 320, 1063-1067. | 12.6 | 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. <i>Journal of Geophysical Research</i> , 2007, 112, . | 3.3 | 81 |
| 72 | Geologic and spectral mapping of etched terrain deposits in northern Meridiani Planum. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 149 |
| 74 | Characterization and petrologic interpretation of olivine-rich basalts at Gusev Crater, Mars. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 227 |
| 75 | Gusev crater: Wind-related features and processes observed by the Mars Exploration Rover Spirit. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 140 |
| 76 | Spectrophotometric properties of materials observed by Pancam on the Mars Exploration Rovers: 1. Spirit. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 49 |
| 77 | In situ and experimental evidence for acidic weathering of rocks and soils on Mars. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 234 |
| 79 | Rocks of the Columbia Hills. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 64 |
| 81 | Mössbauer 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. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 215 |
| 84 | Spectrophotometric properties of materials observed by Pancam on the Mars Exploration Rovers: 2. Opportunity. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 36 |
| 85 | Global Mineralogical and Aqueous Mars History Derived from OMEGA/Mars Express Data. <i>Science</i> , 2006, 312, 400-404. | 12.6 | 1,395 |
| 86 | Mössbauer 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. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a. | 3.3 | 225 |
| 87 | An integrated view of the chemistry and mineralogy of martian soils. <i>Nature</i> , 2005, 436, 49-54. | 27.8 | 348 |
| 88 | Water alteration of rocks and soils on Mars at the Spirit rover site in Gusev crater. <i>Nature</i> , 2005, 436, 66-69. | 27.8 | 240 |
| 89 | Phyllosilicates on Mars and implications for early martian climate. <i>Nature</i> , 2005, 438, 623-627. | 27.8 | 825 |
| 90 | Stratigraphy and sedimentology of a dry to wet eolian depositional system, Burns formation, Meridiani Planum, Mars. <i>Earth and Planetary Science Letters</i> , 2005, 240, 11-72. | 4.4 | 496 |

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| 91 | Soils of Eagle Crater and Meridiani Planum at the Opportunity Rover Landing Site. <i>Science</i> , 2004, 306, 1723-1726. | 12.6 | 153 |
| 92 | Jarosite and Hematite at Meridiani Planum from Opportunity's Mössbauer Spectrometer. <i>Science</i> , 2004, 306, 1740-1745. | 12.6 | 733 |
| 93 | Pancam Multispectral Imaging Results from the Spirit Rover at Gusev Crater. <i>Science</i> , 2004, 305, 800-806. | 12.6 | 153 |
| 94 | Pancam Multispectral Imaging Results from the Opportunity Rover at Meridiani Planum. <i>Science</i> , 2004, 306, 1703-1709. | 12.6 | 135 |
| 95 | Mineralogy at Gusev Crater from the Mossbauer Spectrometer on the Spirit Rover. <i>Science</i> , 2004, 305, 833-836. | 12.6 | 279 |
| 96 | In Situ Evidence for an Ancient Aqueous Environment at Meridiani Planum, Mars. <i>Science</i> , 2004, 306, 1709-1714. | 12.6 | 845 |
| 97 | Localization and Physical Property Experiments Conducted by Opportunity at Meridiani Planum. <i>Science</i> , 2004, 306, 1730-1733. | 12.6 | 130 |
| 98 | Localization and Physical Properties Experiments Conducted by Spirit at Gusev Crater. <i>Science</i> , 2004, 305, 821-824. | 12.6 | 166 |
| 99 | The Spirit Rover's Athena Science Investigation at Gusev Crater, Mars. <i>Science</i> , 2004, 305, 794-799. | 12.6 | 404 |
| 100 | Basaltic Rocks Analyzed by the Spirit Rover in Gusev Crater. <i>Science</i> , 2004, 305, 842-845. | 12.6 | 244 |
| 101 | Mars Exploration Rover mission. <i>Journal of Geophysical Research</i> , 2003, 108, . | 3.3 | 102 |
| 102 | Rock Abrasion Tool: Mars Exploration Rover mission. <i>Journal of Geophysical Research</i> , 2003, 108, . | 3.3 | 131 |
| 103 | Selection of the Mars Exploration Rover landing sites. <i>Journal of Geophysical Research</i> , 2003, 108, . | 3.3 | 155 |
| 104 | Athena Mars rover science investigation. <i>Journal of Geophysical Research</i> , 2003, 108, . | 3.3 | 233 |
| 105 | Geologic setting and origin of Terra Meridiani hematite deposit on Mars. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Geophysical Research</i> , 2000, 105, 29207-29221. | 3.3 | 25 |
| 107 | Wind-blown streaks, splotches, and associated craters on Mars: Statistical analysis of Mariner 9 photographs. <i>Icarus</i> , 1974, 21, 12-27. | 2.5 | 73 |