James B Garvin

List of Publications by Year
in descending order

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93 papers	10,703 citations	61857 43 h-index	54797 84 g-index
93 all docs	93 docs citations	93 times ranked	5568 citing authors

#	Article	IF	Citations
1	Mars Orbiter Laser Altimeter: Experiment summary after the first year of global mapping of Mars. Journal of Geophysical Research, 2001, 106, 23689-23722.	3.3	1,344
2	The Global Topography of Mars and Implications for Surface Evolution. Science, 1999, 284, 1495-1503.	6.0	826
3	A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1242777.	6.0	687
4	Mineralogy of a Mudstone at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1243480.	6.0	508
5	The Mars Observer laser altimeter investigation. Journal of Geophysical Research, 1992, 97, 7781-7797.	3.3	446
6	Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover. Science, 2013, 341, 1238937.	6.0	367
7	X-ray Diffraction Results from Mars Science Laboratory: Mineralogy of Rocknest at Gale Crater. Science, 2013, 341, 1238932.	6.0	327
8	Abundance and Isotopic Composition of Gases in the Martian Atmosphere from the Curiosity Rover. Science, 2013, 341, 263-266.	6.0	327
9	Martian Fluvial Conglomerates at Gale Crater. Science, 2013, 340, 1068-1072.	6.0	326
10	Lunar Reconnaissance Orbiter Overview: TheÂInstrument Suite and Mission. Space Science Reviews, 2007, 129, 391-419.	3.7	322
11	Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow. Science, 2013, 341, 1239505.	6.0	280
12	Initial results from the InSight mission on Mars. Nature Geoscience, 2020, 13, 183-189.	5.4	274
13	Hydrogen Mapping of the Lunar South Pole Using the LRO Neutron Detector Experiment LEND. Science, 2010, 330, 483-486.	6.0	265
14	Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1244734.	6.0	246
15	Isotope Ratios of H, C, and O in CO ₂ and H ₂ O of the Martian Atmosphere. Science, 2013, 341, 260-263.	6.0	241
16	Observations of the North Polar Region of Mars from the Mars Orbiter Laser Altimeter. , 1998, 282, 2053-2060.		231
17	In Situ Radiometric and Exposure Age Dating of the Martian Surface. Science, 2014, 343, 1247166.	6.0	224
18	Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. Science, 2013, 341, 1238670.	6.0	215

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19	Topography of the Northern Hemisphere of Mars from the Mars Orbiter Laser Altimeter. Science, 1998, 279, 1686-1692.	6.0	196
20	Standardizing the nomenclature of Martian impact crater ejecta morphologies. Journal of Geophysical Research, 2000, 105, 26733-26738.	3.3	180
21	The Shape of 433 Eros from the NEAR-Shoemaker Laser Rangefinder. Science, 2000, 289, 2097-2101.	6.0	171
22	The Petrochemistry of Jake_M: A Martian Mugearite. Science, 2013, 341, 1239463.	6.0	134
23	Lunar Reconnaissance Orbiter (LRO): Observations forÂLunar Exploration and Science. Space Science Reviews, 2010, 150, 7-22.	3.7	123
24	North Polar Region Craterforms on Mars: Geometric Characteristics from the Mars Orbiter Laser Altimeter. Icarus, 2000, 144, 329-352.	1.1	119
25	The Mars Science Laboratory (MSL) Mast cameras and Descent imager: Investigation and instrument descriptions. Earth and Space Science, 2017, 4, 506-539.	1.1	117
26	Geology of the InSight landing site on Mars. Nature Communications, 2020, 11, 1014.	5.8	107
27	Mantled and exhumed terrains in Terra Meridiani, Mars. Journal of Geophysical Research, 2003, 108, .	3.3	92
28	Lunar Exploration Neutron Detector for the NASA Lunar Reconnaissance Orbiter. Space Science Reviews, 2010, 150, 183-207.	3.7	92
29	Mars Orbiter Laser Altimeter pulse width measurements and footprint-scale roughness. Geophysical Research Letters, 2003, 30, .	1.5	89
30	Geometric properties of Martian impact craters: Preliminary results from the Mars Orbiter Laser Altimeter. Geophysical Research Letters, 1998, 25, 4405-4408.	1.5	77
31	Venus: The nature of the surface from Venera panoramas. Journal of Geophysical Research, 1984, 89, 3381-3399.	3.3	67
32	Observations of the Earth's topography from the Shuttle Laser Altimeter (SLA): Laser-pulse Echo-recovery measurements of terrestrial surfaces. Physics and Chemistry of the Earth, 1998, 23, 1053-1068.	0.3	67
33	Small-Scale Topography of 433 Eros from Laser Altimetry and Imaging. Icarus, 2002, 155, 51-74.	1.1	66
34	A geometric model for excavation and modification at terrestrial simple impact craters. Journal of Geophysical Research, 1984, 89, 11561-11572.	3.3	63
35	Venus global radar reflectivity and correlations with elevation. Journal of Geophysical Research, 1985, 90, 6859-6871.	3.3	63
36	Revealing the Mysteries of Venus: The DAVINCI Mission. Planetary Science Journal, 2022, 3, 117.	1.5	62

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37	Testing polar spots of waterâ€rich permafrost on the Moon: LEND observations onboard LRO. Journal of Geophysical Research, 2012, 117, .	3.3	60
38	Estimation of erosion, deposition, and net volumetric change caused by the 1996 SkeiÃ°arÃ¡rsandur jÃ¶kulhlaup, Iceland, from Synthetic Aperture Radar Interferometry. Water Resources Research, 2000, 36, 1583-1594.	1.7	53
39	Topographic Evidence for Geologically Recent Near-Polar Volcanism on Mars. Icarus, 2000, 145, 648-652.	1.1	49
40	Assessment of a 2016 mission concept: The search for trace gases in the atmosphere of Mars. Planetary and Space Science, 2011, 59, 284-291.	0.9	49
41	Testing lunar permanently shadowed regions for water ice: LEND results from LRO. Journal of Geophysical Research, 2012, 117, .	3.3	49
42	Surface characteristics of Venus derived from Pioneer Venus altimetry, roughness, and reflectivity measurements. Journal of Geophysical Research, 1985, 90, 6873-6885.	3.3	47
43	Characterization of rock populations on planetary surfaces: Techniques and a preliminary analysis of Mars and Venus. The Moon and the Planets, 1981, 24, 355-387.	0.5	44
44	The Geoscience Laser Altimetry/Ranging System. IEEE Transactions on Geoscience and Remote Sensing, 1987, GE-25, 581-592.	2.7	44
45	Characteristics of pebbleâ€and cobbleâ€sized clasts along the Curiosity rover traverse from Bradbury Landing to Rocknest. Journal of Geophysical Research E: Planets, 2013, 118, 2361-2380.	1.5	44
46	Vertical roughness of Mars from the Mars Orbiter Laser Altimeter. Geophysical Research Letters, 1999, 26, 381-384.	1.5	43
47	Terrain physical properties derived from orbital data and the first 360 sols of Mars Science Laboratory Curiosity rover observations in Gale Crater. Journal of Geophysical Research E: Planets, 2014, 119, 1322-1344.	1.5	43
48	Monitoring and Modeling the Rapid Evolution of Earth's Newest Volcanic Island: Hunga Tonga Hunga Ha'apai (Tonga) Using High Spatial Resolution Satellite Observations. Geophysical Research Letters, 2018, 45, 3445-3452.	1.5	43
49	Science Goals and Mission Architecture of the Europa Lander Mission Concept. Planetary Science Journal, 2022, 3, 22.	1.5	42
50	Spacecraft sample collection and subsurface excavation of asteroid (101955) Bennu. Science, 2022, 377, 285-291.	6.0	39
51	Laser Altimetry of Small-Scale Features on 433 Eros from NEAR-Shoemaker. Science, 2001, 292, 488-491.	6.0	38
52	High spatial resolution studies of epithermal neutron emission from the lunar poles: Constraints on hydrogen mobility. Journal of Geophysical Research, 2012, 117, .	3.3	38
53	Gale crater and impact processes â€“ Curiosityâ€™s first 364 Sols on Mars. Icarus, 2015, 249, 108-128.	1.1	37
54	Landsat-TM identification of Amblyomma variegatum (Acari: Ixodidae) Habitats in Guadeloupe. Remote Sensing of Environment, 1992, 40, 43-55.	4.6	36

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55	Experiment LEND of the NASA Lunar Reconnaissance Orbiter for High-Resolution Mapping of Neutron Emission of the Moon. Astrobiology, 2008, 8, 793-804.	1.5	36
56	Global maps of lunar neutron fluxes from the LEND instrument. Journal of Geophysical Research, 2012, 117, .	3.3	35
57	Following the water, the new program for Mars exploration. Acta Astronautica, 2002, 51, 337-350.	1.7	32
58	Geomorphic impact and rapid subsequent recovery from the 1996 SkeiÃ°arÃ¡rsandur jÃ¶kulhlaup, Iceland, measured with multi-year airborne lidar. Geomorphology, 2006, 75, 65-75.	1.1	30
59	The global budget of impact-derived sediments on Venus. Earth, Moon and Planets, 1990, 50-51, 175-190.	0.3	29
60	Topography, roughness, layering, and slope properties of the Medusae Fossae Formation from Mars Orbiter Laser Altimeter (MOLA) and Mars Orbiter Camera (MOC) data. Journal of Geophysical Research, 1999, 104, 24141-24154.	3.3	28
61	Highâ€latitude coldâ€based glacial deposits on Mars: Multiple superposed drop moraines in a crater interior at 70Â°N latitude. Meteoritics and Planetary Science, 2006, 41, 1659-1674.	0.7	28
62	Evaluation of remote-sensing techniques to measure decadal-scale changes of HofsjÃ¶kull ice cap, Iceland. Journal of Glaciology, 2000, 46, 375-388.	1.1	27
63	Magma vesiculation and pyroclastic volcanism on Venus. Icarus, 1982, 52, 365-372.	1.1	24
64	Lava flow topographic measurements for radar data interpretation. Geophysical Research Letters, 1993, 20, 831-834.	1.5	24
65	Vortexâ€Dominated Aeolian Activity at InSight's Landing Site, Part 1: Multiâ€Instrument Observations, Analysis, and Implications. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006757.	1.5	23
66	High resolution mapping of TiO₂ abundances on the Moon using the Hubble Space Telescope. Geophysical Research Letters, 2007, 34, .	1.5	22
67	Characteristics of large terrestrial impact structures as revealed by remote sensing studies. Tectonophysics, 1992, 216, 45-62.	0.9	21
68	Mars exploration. Nature, 2001, 412, 250-253.	13.7	20
69	Extraformational sediment recycling on Mars. , 2020, 16, 1508-1537.		20
70	Vortexâ€Dominated Aeolian Activity at InSight's Landing Site, Part 2: Local Meteorology, Transport Dynamics, and Model Analysis. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006514.	1.5	19
71	In Situ and Orbital Stratigraphic Characterization of the InSight Landing Siteâ€”A Type Example of a Regolithâ€Covered Lava Plain on Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	17
72	Deflation/erosion rates for the Parva Member, Dorsa Argentea Formation and implications for the south polar region of Mars. Journal of Geophysical Research, 2003, 108, .	3.3	16

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73	Small domes on Venus: Probable analogs of Icelandic lava shields. Geophysical Research Letters, 1990, 17, 1381-1384.	1.5	14
74	DAVINCI: Deep atmosphere venus investigation of noble gases, chemistry, and imaging. , 2017, , .		13
75	NASA's New Mars Exploration Program: The Trajectory of Knowledge. Astrobiology, 2001, 1, 439-446.	1.5	11
76	The Zhamanshin impact feature: A new class of complex crater?. Special Paper of the Geological Society of America, 1992, , 249-258.	0.5	9
77	Taking a clear look at cloud-covered oceanic islands on a seasonal basis. Eos, 1999, 80, 49.	0.1	8
78	Exploring the human-nature dynamics of Hunga Tonga Hunga Ha'apai, Earth's newest landmass. Journal of Volcanology and Geothermal Research, 2020, 401, 106902.	0.8	8
79	Topographic characterization and monitoring of volcanoes via airborne laser altimetry. Geological Society Special Publication, 1996, 110, 137-152.	0.8	7
80	The science behind the vision for U.S. space exploration: the value of a humanâ€“robotic partnership. Earth, Moon and Planets, 2005, 94, 221-232.	0.3	6
81	Coral reef annihilation, persistence and recovery at Earthâ€™s youngest volcanic island. Coral Reefs, 2020, 39, 529-536.	0.9	6
82	Vega landing sites: Venera 15/16 unit analogs from Pioneer Venus reflectivity and RMS slope data. Geophysical Research Letters, 1986, 13, 1415-1418.	1.5	5
83	Lunar Reconnaissance Orbiter (LRO): Observations forÂLunar Exploration and Science. , 2010, , 7-22.		5
84	SURFACE ALTERATION FROM LANDING INSIGHT ON MARS AND ITS IMPLICATIONS FOR SHALLOW REGOLITH STRUCTURE. , 2019, , .		5
85	ICESat-2 Applications for Investigating Emerging Volcanoes. Geosciences (Switzerland), 2022, 12, 40.	1.0	5
86	Satellite radar images capture a subglacial volcanic eruption in Iceland. Eos, 1999, 80, 205.	0.1	3
87	The Emerging Face of Mars: A Synthesis from Viking to Mars Global Surveyor. Astrobiology, 2001, 1, 513-521.	1.5	2
88	Introduction to the special section: Mars Exploration Rover mission and landing sites. Journal of Geophysical Research, 2003, 108, .	3.3	2
89	Lower-cost, relocatable lunar polar lander and lunar surface sample return probes. , 2011, , .		2
90	Breakthrough capability for the NASA astrophysics explorer program: reaching the darkest sky. Proceedings of SPIE, 2012, , .	0.8	2

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91	Reply [to â€œComment on â€˜Venus: The nature of the surface from Venera panoramasâ€™ by J. B. Garvin, J. W. Head, M. T. Zuber, and P. Helfensteinâ€]. Journal of Geophysical Research, 1985, 90, 6895-6896.	3.3	0
92	The Price of Exploration. Science, 2008, 322, 1324-1324.	6.0	0
93	Lunar Exploration Neutron Detector for the NASA Lunar Reconnaissance Orbiter. , 2009, , 183-207.		0