Timothy D Glotch

List of Publications by Year
in descending order

75 papers	3,852 citations	136950 32 h-index	123424 61 g-index
76 all docs	76 docs citations	76 times ranked	3016 citing authors

#	Article	IF	Citations
1	Diviner Lunar Radiometer Observations of Cold Traps in the Moonâ€™s South Polar Region. Science, 2010, 330, 479-482.	12.6	385
2	Chloride-Bearing Materials in the Southern Highlands of Mars. Science, 2008, 319, 1651-1654.	12.6	381
3	Spectroscopic Identification of Carbonate Minerals in the Martian Dust. Science, 2003, 301, 1084-1087.	12.6	333
4	Highly Silicic Compositions on the Moon. Science, 2010, 329, 1510-1513.	12.6	175
5	Initial Results from the Mini-TES Experiment in Gusev Crater from the Spirit Rover. Science, 2004, 305, 837-842.	12.6	168
6	Global Silicate Mineralogy of the Moon from the Diviner Lunar Radiometer. Science, 2010, 329, 1507-1509.	12.6	154
7	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
8	Geologic and mineralogic mapping of Aram Chaos: Evidence for a water-rich history. Journal of Geophysical Research, 2005, 110, .	3.3	143
9	Non-mare silicic volcanism on the lunar farside at Comptonâ€“Belkovich. Nature Geoscience, 2011, 4, 566-571.	12.9	114
10	Mineralogy of the light-toned outcrop at Meridiani Planum as seen by the Miniature Thermal Emission Spectrometer and implications for its formation. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	107
11	Distribution and formation of chlorides and phyllosilicates in Terra Sirenum, Mars. Geophysical Research Letters, 2010, 37, .	4.0	91
12	Spectroscopic study of the dehydration and/or dehydroxylation of phyllosilicate and zeolite minerals. Journal of Geophysical Research, 2011, 116, .	3.3	89
13	Formation of lunar swirls by magnetic field standoff of the solar wind. Nature Communications, 2015, 6, 6189.	12.8	73
14	Bright carbonate veins on asteroid (101955) Bennu: Implications for aqueous alteration history. Science, 2020, 370, .	12.6	71
15	The Mairan domes: Silicic volcanic constructs on the Moon. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	70
16	Effect of precursor mineralogy on the thermal infrared emission spectra of hematite: Application to Martian hematite mineralization. Journal of Geophysical Research, 2004, 109, .	3.3	69
17	Mid-infrared reflectance spectra and optical constants of six iron oxide/oxyhydroxide phases. Icarus, 2009, 204, 663-671.	2.5	66
18	Mid-infrared (5â€“100 Î¼m) reflectance spectra and optical constants of ten phyllosilicate minerals. Icarus, 2007, 192, 605-622.	2.5	63

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19	LRO observations of morphology and surface roughness of volcanic cones and lobate lava flows in the Marius Hills. Journal of Geophysical Research E: Planets, 2013, 118, 615-634.	3.6	57
20	Fresnel modeling of hematite crystal surfaces and application to martian hematite spherules. Icarus, 2006, 181, 408-418.	2.5	53
21	Maskelynite formation via solidâ€state transformation: Evidence of infrared and Xâ€ray anisotropy. Journal of Geophysical Research E: Planets, 2015, 120, 570-587.	3.6	53
22	The Mons RÃ¼mker volcanic complex of the Moon: A candidate landing site for the Chang'Eâ€5 mission. Journal of Geophysical Research E: Planets, 2017, 122, 1419-1442.	3.6	52
23	Constraints on the composition and particle size of chloride saltâ€bearing deposits on Mars. Journal of Geophysical Research E: Planets, 2016, 121, 454-471.	3.6	50
24	Determination and interpretation of surface and atmospheric Miniature Thermal Emission Spectrometer spectral end-members at the Meridiani Planum landing site. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	49
25	Thermal transformations of akaganÃ©ite and lepidocrocite to hematite: assessment of possible precursors to Martian crystalline hematite. Physics and Chemistry of Minerals, 2008, 35, 569-581.	0.8	48
26	The effect of high temperatures on the mid-to-far-infrared emission and near-infrared reflectance spectra of phyllosilicates and natural zeolites: Implications for martian exploration. Icarus, 2012, 218, 585-601.	2.5	44
27	Space weathering effects in Diviner Lunar Radiometer multispectral infrared measurements of the lunar Christiansen Feature: Characteristics and mitigation. Icarus, 2017, 283, 343-351.	2.5	41
28	Midinfrared spectroscopy of synthetic olivines: Thermal emission, specular and diffuse reflectance, and attenuated total reflectance studies of forsterite to fayalite. Journal of Geophysical Research, 2011, 116, .	3.3	39
29	Particle Size Effects on Midâ€Infrared Spectra of Lunar Analog Minerals in a Simulated Lunar Environment. Journal of Geophysical Research E: Planets, 2019, 124, 970-988.	3.6	36
30	Endâ€member identification and spectral mixture analysis of CRISM hyperspectral data: A case study on southwest Melas Chasma, Mars. Journal of Geophysical Research E: Planets, 2016, 121, 2004-2036.	3.6	34
31	Evidence for magmaâ€carbonate interaction beneath Syrtis Major, Mars. Journal of Geophysical Research E: Planets, 2013, 118, 126-137.	3.6	33
32	Measurements of Oxychlorine species on Mars. International Journal of Astrobiology, 2017, 16, 203-217.	1.6	33
33	Investigation of the near-infrared spectral character of putative Martian chloride deposits. Journal of Geophysical Research, 2011, 116, .	3.3	32
34	The SariÃ§iÃ§ek howardite fall in Turkey: Source crater of <scp>HED</scp> meteorites on Vesta and impact risk of Vestoids. Meteoritics and Planetary Science, 2019, 54, 953-1008.	1.6	30
35	Evidence for limited compositional and particle size variation on asteroid (101955) Bennu from thermal infrared spectroscopy. Astronomy and Astrophysics, 2021, 650, A120.	5.1	30
36	Constraints on olivineâ€rich rock types on the Moon as observed by Diviner and M³: Implications for the formation of the lunar crust. Journal of Geophysical Research E: Planets, 2016, 121, 1342-1361.	3.6	29

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37	Pressure-induced amorphization in plagioclase feldspars: A time-resolved powder diffraction study during rapid compression. Earth and Planetary Science Letters, 2019, 507, 166-174.	4.4	28
38	Distinct Carbonate Lithologies in Jezero Crater, Mars. Geophysical Research Letters, 2021, 48, e2020GL092365.	4.0	25
39	Microspectroscopic and Petrographic Comparison of Experimentally Shocked Albite, Andesine, and Bytownite. Journal of Geophysical Research E: Planets, 2018, 123, 1701-1722.	3.6	24
40	Structural and spectroscopic changes to natural nontronite induced by experimental impacts between 10 and 40â€‰GPa. Journal of Geophysical Research E: Planets, 2015, 120, 888-912.	3.6	20
41	Context matters â€“ Arâ€“Ar results from in and around the Manicouagan Impact Structure, Canada: Implications for martian meteorite chronology. Earth and Planetary Science Letters, 2018, 501, 78-89.	4.4	19
42	Radiativeâ€Transfer Modeling of Spectra of Planetary Regoliths Using Clusterâ€Based Dense Packing Modifications. Journal of Geophysical Research E: Planets, 2018, 123, 1203-1220.	3.6	18
43	Optical constants of synthetic potassium, sodium, and hydronium jarosite. American Mineralogist, 2015, 100, 1110-1122.	1.9	17
44	The Geology and Astrobiology of McLaughlin Crater, Mars: An Ancient Lacustrine Basin Containing Turbidites, Mudstones, and Serpentinites. Journal of Geophysical Research E: Planets, 2019, 124, 910-940.	3.6	17
45	Tâ€matrix and radiative transfer hybrid models for densely packed particulates at midâ€infrared wavelengths. Journal of Geophysical Research E: Planets, 2017, 122, 822-838.	3.6	15
46	Geology of Mairan middle dome: Its implication to silicic volcanism on the Moon. Planetary and Space Science, 2018, 162, 62-72.	1.7	15
47	Thermal emission spectroscopy of microcrystalline sedimentary phases: Effects of natural surface roughness on spectral feature shape. Journal of Geophysical Research E: Planets, 2016, 121, 542-555.	3.6	14
48	MGSâ€TES Spectra Suggest a Basaltic Component in the Regolith of Phobos. Journal of Geophysical Research E: Planets, 2018, 123, 2467-2484.	3.6	14
49	Paleolakes in the Northwest Hellas Region, Mars: Implications for the Regional Geologic History and Paleoclimate. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006196.	3.6	13
50	Mid-infrared optical constants of clinopyroxene and orthoclase derived from oriented single-crystal reflectance spectra. American Mineralogist, 2014, 99, 1942-1955.	1.9	12
51	Examining Structural and Related Spectral Change in Mars-relevant Phyllosilicates After Experimental Impacts Between 10â€“40 GPa. Clays and Clay Minerals, 2016, 64, 189-209.	1.3	11
52	Shock metamorphism of clay minerals on Mars by meteor impact. Geophysical Research Letters, 2017, 44, 6562-6569.	4.0	11
53	Low-temperature specific heat capacity measurements and application to Mars thermal modeling. Icarus, 2019, 321, 824-840.	2.5	11
54	The Scientific Value of a Sustained Exploration Program at the Aristarchus Plateau. Planetary Science Journal, 2021, 2, 136.	3.6	11

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55	Machine Learning Midâ€Infrared Spectral Models for Predicting Modal Mineralogy of CI/CM Chondritic Asteroids and Bennu. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE007035.	3.6	11
56	Nano-FTIR spectroscopic identification of prebiotic carbonyl compounds in Dominion Range 08006 carbonaceous chondrite. Scientific Reports, 2021, 11, 11656.	3.3	10
57	Midâ€Infrared Optical Constants of Labradorite, a Triclinic Plagioclase Mineral. Earth and Space Science, 2019, 6, 2410-2422.	2.6	9
58	Carbonaceous matter in the SariÃ§iÃ§ek meteorite. Meteoritics and Planetary Science, 2019, 54, 1495-1511.	1.6	8
59	Biconical reflectance, microâ€Raman, and nanoâ€FTIR spectroscopy of the Didim (H3â€5) meteorite: Chemical content and molecular variations. Meteoritics and Planetary Science, 2020, 55, 2404-2421.	1.6	8
60	Threeâ€Dimensional Raman Tomographic Microspectroscopy: A Novel Imaging Technique. Earth and Space Science, 2018, 5, 380-392.	2.6	7
61	Spectral Properties of Chloride Saltâ€Bearing Assemblages: Implications for Detection Limits of Minor Phases in Chlorideâ€Bearing Deposits on Mars. Journal of Geophysical Research E: Planets, 2019, 124, 209-222.	3.6	7
62	Raman and Infrared Microspectroscopy of Experimentally Shocked Basalts. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006240.	3.6	7
63	The Incorporation of Field Portable Instrumentation Into Human Planetary Surface Exploration. Earth and Space Science, 2018, 5, 697-720.	2.6	6
64	Unconventional high-pressure Raman spectroscopy study of kinetic and peak pressure effects in plagioclase feldspars. Physics and Chemistry of Minerals, 2020, 47, 1.	0.8	6
65	Incorporation of Portable Infrared Spectral Imaging Into Planetary Geological Field Work: Analog Studies at KÄ«lauea Volcano, Hawaii, and Potrillo Volcanic Field, New Mexico. Earth and Space Science, 2018, 5, 676-696.	2.6	5
66	Infrared Spectral Evidence for Kâ€Metasomatism of Volcanic Rocks on Mars. Geophysical Research Letters, 2021, 48, e2021GL093882.	4.0	5
67	Orientation Averaged Visible/Nearâ€Infrared and Midâ€Infrared Optical Constants of Hydrous Caâ€Sulfates: Gypsum and Bassanite. Earth and Space Science, 2021, 8, e2021EA001834.	2.6	5
68	Olivine Dissolution in Simulated Lung and Gastric Fluid as an Analog to the Behavior of Lunar Particulate Matter Inside the Human Respiratory and Gastrointestinal Systems. GeoHealth, 2021, 5, e2021GH000491.	4.0	4
69	Nanoscale Infrared Characterization of Dark Clasts and Fine-Grained Rims in CM2 Chondrites: Aguas Zarcas and Jbilet Winselwan. ACS Earth and Space Chemistry, 2021, 5, 3281-3296.	2.7	4
70	Compositional and spectroscopic investigation of three ungrouped carbonaceous chondrites. Meteoritics and Planetary Science, 2022, 57, 1665-1687.	1.6	4
71	Ultraviolet Photooxidation of Smectiteâ€Bound Fe(II) and Implications for the Origin of Martian Nontronites. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	3
72	Nanoâ€FTIR Investigation of the CM Chondrite Allan Hills 83100. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	2

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73	Connecting the Next Generation of Science Journalists with Scientists in Action. GSA Today, 2017, , 44-45.	2.0	1
74	Visible to Midâ€Infrared Optical Constants of Orthopyroxenes. Earth and Space Science, 2022, 9, .	2.6	1
75	Introduction to Science and Exploration of the Moon, Nearâ€Earth Asteroids, and Moons of Mars. Journal of Geophysical Research E: Planets, 2019, 124, 1635-1638.	3.6	0