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	Visible to Midâ€Infrared Optical Constants of Orthopyroxenes. Earth and Space Science, 2022, 9, .	2.6	1
2	Nanoâ€FTIR Investigation of the CM Chondrite Allan Hills 83100. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	2
3	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
4	Compositional and spectroscopic investigation of three ungrouped carbonaceous chondrites. Meteoritics and Planetary Science, 2022, 57, 1665-1687.	1.6	4
5	Infrared Spectral Evidence for Kâ€Metasomatism of Volcanic Rocks on Mars. Geophysical Research Letters, 2021, 48, e2021GL093882.	4.0	5
6	Distinct Carbonate Lithologies in Jezero Crater, Mars. Geophysical Research Letters, 2021, 48, e2020GL092365.	4.0	25
7	Nano-FTIR spectroscopic identification of prebiotic carbonyl compounds in Dominion Range 08006 carbonaceous chondrite. Scientific Reports, 2021, 11, 11656.	3.3	10
8	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
9	The Scientific Value of a Sustained Exploration Program at the Aristarchus Plateau. Planetary Science Journal, 2021, 2, 136.	3.6	11
10	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
11	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
12	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
13	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
14	Bright carbonate veins on asteroid (101955) Bennu: Implications for aqueous alteration history. Science, 2020, 370, .	12.6	71
15	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
16	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
17	Raman and Infrared Microspectroscopy of Experimentally Shocked Basalts. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006240.	3.6	7
18	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

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19	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
20	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
21	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
22	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
23	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
24	Carbonaceous matter in the SariÃ§iÃ§ek meteorite. Meteoritics and Planetary Science, 2019, 54, 1495-1511.	1.6	8
25	Midâ€Infrared Optical Constants of Labradorite, a Triclinic Plagioclase Mineral. Earth and Space Science, 2019, 6, 2410-2422.	2.6	9
26	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
27	Low-temperature specific heat capacity measurements and application to Mars thermal modeling. Icarus, 2019, 321, 824-840.	2.5	11
28	Geology of Mairan middle dome: Its implication to silicic volcanism on the Moon. Planetary and Space Science, 2018, 162, 62-72.	1.7	15
29	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
30	Threeâ€Dimensional Raman Tomographic Microspectroscopy: A Novel Imaging Technique. Earth and Space Science, 2018, 5, 380-392.	2.6	7
31	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
32	The Incorporation of Field Portable Instrumentation Into Human Planetary Surface Exploration. Earth and Space Science, 2018, 5, 697-720.	2.6	6
33	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
34	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
35	Microspectroscopic and Petrographic Comparison of Experimentally Shocked Albite, Andesine, and Bytownite. Journal of Geophysical Research E: Planets, 2018, 123, 1701-1722.	3.6	24
36	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

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37	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
38	Shock metamorphism of clay minerals on Mars by meteor impact. Geophysical Research Letters, 2017, 44, 6562-6569.	4.0	11
39	Measurements of Oxychlorine species on Mars. International Journal of Astrobiology, 2017, 16, 203-217.	1.6	33
40	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
41	Connecting the Next Generation of Science Journalists with Scientists in Action. GSA Today, 2017, , 44-45.	2.0	1
42	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
43	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
44	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
45	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
46	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
47	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
48	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
49	Optical constants of synthetic potassium, sodium, and hydronium jarosite. American Mineralogist, 2015, 100, 1110-1122.	1.9	17
50	Formation of lunar swirls by magnetic field standoff of the solar wind. Nature Communications, 2015, 6, 6189.	12.8	73
51	Mid-infrared optical constants of clinopyroxene and orthoclase derived from oriented single-crystal reflectance spectra. American Mineralogist, 2014, 99, 1942-1955.	1.9	12
52	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
53	Evidence for magmaâ€carbonate interaction beneath Syrtis Major, Mars. Journal of Geophysical Research E: Planets, 2013, 118, 126-137.	3.6	33
54	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

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55	Non-mare silicic volcanism on the lunar farside at Comptonâ€“Belkovich. Nature Geoscience, 2011, 4, 566-571.	12.9	114
56	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
57	Spectroscopic study of the dehydration and/or dehydroxylation of phyllosilicate and zeolite minerals. Journal of Geophysical Research, 2011, 116, .	3.3	89
58	The Mairan domes: Silicic volcanic constructs on the Moon. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	70
59	Investigation of the near-infrared spectral character of putative Martian chloride deposits. Journal of Geophysical Research, 2011, 116, .	3.3	32
60	Global Silicate Mineralogy of the Moon from the Diviner Lunar Radiometer. Science, 2010, 329, 1507-1509.	12.6	154
61	Highly Silicic Compositions on the Moon. Science, 2010, 329, 1510-1513.	12.6	175
62	Distribution and formation of chlorides and phyllosilicates in Terra Sirenum, Mars. Geophysical Research Letters, 2010, 37, .	4.0	91
63	Diviner Lunar Radiometer Observations of Cold Traps in the Moonâ€™s South Polar Region. Science, 2010, 330, 479-482.	12.6	385
64	Mid-infrared reflectance spectra and optical constants of six iron oxide/oxyhydroxide phases. Icarus, 2009, 204, 663-671.	2.5	66
65	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
66	Chloride-Bearing Materials in the Southern Highlands of Mars. Science, 2008, 319, 1651-1654.	12.6	381
67	Mid-infrared (5â€“100 Î¼m) reflectance spectra and optical constants of ten phyllosilicate minerals. Icarus, 2007, 192, 605-622.	2.5	63
68	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
69	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
70	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
71	Fresnel modeling of hematite crystal surfaces and application to martian hematite spherules. Icarus, 2006, 181, 408-418.	2.5	53
72	Geologic and mineralogic mapping of Aram Chaos: Evidence for a water-rich history. Journal of Geophysical Research, 2005, 110, .	3.3	143

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73	Initial Results from the Mini-TES Experiment in Gusev Crater from the Spirit Rover. Science, 2004, 305, 837-842.	12.6	168
74	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
75	Spectroscopic Identification of Carbonate Minerals in the Martian Dust. Science, 2003, 301, 1084-1087.	12.6	333