

Francis M Mccubbin

List of Publications by Year in descending order

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Version: 2024-02-01

80
papers

4,747
citations

66343

42
h-index

95266

68
g-index

80
all docs

80
docs citations

80
times ranked

2682
citing authors

#	ARTICLE	IF	CITATIONS
1	Organic synthesis associated with serpentinization and carbonation on early Mars. <i>Science</i> , 2022, 375, 172-177.	12.6	32
2	Planning Implications Related to Sterilization-Sensitive Science Investigations Associated with Mars Sample Return (MSR). <i>Astrobiology</i> , 2022, 22, S-112-S-164.	3.0	7
3	Final Report of the Mars Sample Return Science Planning Group 2 (MSPG2). <i>Astrobiology</i> , 2022, 22, S-5-S-26.	3.0	15
4	Rationale and Proposed Design for a Mars Sample Return (MSR) Science Program. <i>Astrobiology</i> , 2022, 22, S-27-S-56.	3.0	14
5	The Scientific Importance of Returning Airfall Dust as a Part of Mars Sample Return (MSR). <i>Astrobiology</i> , 2022, 22, S-176-S-185.	3.0	5
6	Science and Curation Considerations for the Design of a Mars Sample Return (MSR) Sample Receiving Facility (SRF). <i>Astrobiology</i> , 2022, 22, S-217-S-237.	3.0	7
7	Preliminary Planning for Mars Sample Return (MSR) Curation Activities in a Sample Receiving Facility (SRF). <i>Astrobiology</i> , 2022, 22, S-57-S-80.	3.0	16
8	Development towards stable chlorine isotope measurements of astromaterials using the modified Middleton source of an accelerator mass spectrometer. <i>International Journal of Mass Spectrometry</i> , 2022, 477, 116849.	1.5	1
9	The effects of highly reduced magmatism revealed through aubrites. <i>Meteoritics and Planetary Science</i> , 2022, 57, 1387-1420.	1.6	9
10	COSPAR Sample Safety Assessment Framework (SSAF). <i>Astrobiology</i> , 2022, 22, S-186-S-216.	3.0	7
11	Multispectral imaging and hyperspectral scanning of the first dissection of core 73002: Preliminary results. <i>Meteoritics and Planetary Science</i> , 2021, 56, 1574-1584.	1.6	0
12	The abundances of F, Cl, and H ₂ O in eucrites: Implications for the origin of volatile depletion in the asteroid 4 Vesta. <i>Geochimica Et Cosmochimica Acta</i> , 2021, 314, 270-293.	3.9	11
13	Time-Sensitive Aspects of Mars Sample Return (MSR) Science. <i>Astrobiology</i> , 2021, , .	3.0	10
14	Prokaryotic and Fungal Characterization of the Facilities Used to Assemble, Test, and Launch the OSIRIS-REx Spacecraft. <i>Frontiers in Microbiology</i> , 2020, 11, 530661.	3.5	5
15	The chlorine-isotopic composition of lunar KREEP from magnesian-suite troctolite 76535. <i>American Mineralogist</i> , 2020, 105, 1270-1274.	1.9	8
16	Multiple early-formed water reservoirs in the interior of Mars. <i>Nature Geoscience</i> , 2020, 13, 260-264.	12.9	43
17	Early crust building enhanced on the Moon's nearside by mantle melting-point depression. <i>Nature Geoscience</i> , 2020, 13, 339-343.	12.9	25
18	Constraints on the Abundances of Carbon and Silicon in Mercury's Core From Experiments in the Fe-Si System. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2019JE006239.	3.6	13

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19	Revolutionizing Our Understanding of the Solar System via Sample Return from Mercury. <i>Space Science Reviews</i> , 2019, 215, 1.	8.1	10
20	Advanced Curation of Astromaterials for Planetary Science. <i>Space Science Reviews</i> , 2019, 215, 1.	8.1	50
21	Origin and abundances of H ₂ O in the terrestrial planets, Moon, and asteroids. <i>Earth and Planetary Science Letters</i> , 2019, 526, 115771.	4.4	59
22	The oxidation state of sulfur in lunar apatite. <i>American Mineralogist</i> , 2019, 104, 307-312.	1.9	30
23	Reclassification of four aubrites as enstatite chondrite impact melts: Potential geochemical analogs for Mercury. <i>Meteoritics and Planetary Science</i> , 2019, 54, 785-810.	1.6	14
24	Volatiles in Martian Magmas and the Interior. , 2019, , 13-33.		12
25	Multiple reservoirs of volatiles in the Moon revealed by the isotopic composition of chlorine in lunar basalts. <i>Geochimica Et Cosmochimica Acta</i> , 2019, 266, 144-162.	3.9	41
26	The Role of Halogens During Fluid and Magmatic Processes on Mars. <i>Springer Geochemistry</i> , 2018, , 959-995.	0.1	7
27	The potential for metal contamination during Apollo lunar sample curation. <i>Meteoritics and Planetary Science</i> , 2018, 53, 1283-1291.	1.6	15
28	Experimental investigation of F and Cl partitioning between apatite and Fe-rich basaltic melt at 0 GPa and 950–1050 °C: Evidence for steric controls on apatite-melt exchange equilibria in OH-poor apatite. <i>American Mineralogist</i> , 2018, 103, 1455-1467.	1.9	15
29	Discreditation of bobdownsite and the establishment of criteria for the identification of minerals with essential monofluorophosphate (PO ₃ F ²⁻). <i>American Mineralogist</i> , 2018, 103, 1319-1328.	1.9	13
30	Silica-rich volcanism in the early solar system dated at 4.565 Ga. <i>Nature Communications</i> , 2018, 9, 3036.	12.8	52
31	Early loss, fractionation, and redistribution of chlorine in the Moon as revealed by the low-Ti lunar mare basalt suite. <i>Earth and Planetary Science Letters</i> , 2018, 500, 205-214.	4.4	34
32	Early accretion of water and volatile elements to the inner Solar System: evidence from angrites. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2017, 375, 20160209.	3.4	51
33	Geochemistry, mineralogy, and petrology of boninitic and komatiitic rocks on the mercurian surface: Insights into the mercurian mantle. <i>Icarus</i> , 2017, 285, 155-168.	2.5	79
34	A Low O/Si Ratio on the Surface of Mercury: Evidence for Silicon Smelting?. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 2053-2076.	3.6	36
35	The Northwest Africa 8159 martian meteorite: Expanding the martian sample suite to the early Amazonian. <i>Geochimica Et Cosmochimica Acta</i> , 2017, 218, 1-26.	3.9	58
36	Constraints on the water, chlorine, and fluorine content of the Martian mantle. <i>Meteoritics and Planetary Science</i> , 2016, 51, 2023-2035.	1.6	41

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37	Early degassing of lunar urKREEP by crust-breaching impact(s). <i>Earth and Planetary Science Letters</i> , 2016, 447, 84-94.	4.4	78
38	The provenance, formation, and implications of reduced carbon phases in Martian meteorites. <i>Meteoritics and Planetary Science</i> , 2016, 51, 2203-2225.	1.6	80
39	A review of volatiles in the Martian interior. <i>Meteoritics and Planetary Science</i> , 2016, 51, 1935-1958.	1.6	43
40	Geologic history of Martian regolith breccia Northwest Africa 7034: Evidence for hydrothermal activity and lithologic diversity in the Martian crust. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 2120-2149.	3.6	65
41	Phosphate minerals in the H group of ordinary chondrites, and fluid activity recorded by apatite heterogeneity in the Zag H3-6 regolith breccia. <i>American Mineralogist</i> , 2016, 101, 2452-2467.	1.9	49
42	Rb-87 and Sm-147 isotopic and REE studies of igneous components in the bulk matrix domain of Martian breccia Northwest Africa 7034. <i>Meteoritics and Planetary Science</i> , 2016, 51, 483-498.	1.6	59
43	Heterogeneous distribution of H ₂ O in the Martian interior: Implications for the abundance of H ₂ O in depleted and enriched mantle sources. <i>Meteoritics and Planetary Science</i> , 2016, 51, 2036-2060.	1.6	103
44	The origin of boninites on Mercury: An experimental study of the northern volcanic plains lavas. <i>Geochimica Et Cosmochimica Acta</i> , 2016, 173, 246-263.	3.9	49
45	Exotic crust formation on Mercury: Consequences of a shallow, FeO-poor mantle. <i>Journal of Geophysical Research E: Planets</i> , 2015, 120, 195-209.	3.6	110
46	Petrology of igneous clasts in Northwest Africa 7034: Implications for the petrologic diversity of the martian crust. <i>Geochimica Et Cosmochimica Acta</i> , 2015, 157, 56-85.	3.9	105
47	Petrogenesis of primitive and evolved basalts in a cooling Moon: Experimental constraints from the youngest known lunar magmas. <i>Earth and Planetary Science Letters</i> , 2015, 422, 126-137.	4.4	16
48	Chlorine on the surface of Mercury: MESSENGER gamma-ray measurements and implications for the planet's formation and evolution. <i>Icarus</i> , 2015, 257, 417-427.	2.5	66
49	Origin of the lunar highlands Mg-suite: An integrated petrology, geochemistry, chronology, and remote sensing perspective. <i>American Mineralogist</i> , 2015, 100, 294-325.	1.9	110
50	Experimental investigation of F, Cl, and OH partitioning between apatite and Fe-rich basaltic melt at 1.0-1.2 GPa and 950-1000 °C. <i>American Mineralogist</i> , 2015, 100, 1790-1802.	1.9	112
51	Degassing pathways of Cl-, F-, H-, and S-bearing magmas near the lunar surface: Implications for the composition and Cl isotopic values of lunar apatite. <i>American Mineralogist</i> , 2015, 100, 1717-1727.	1.9	49
52	Magmatic volatiles (H, C, N, F, S, Cl) in the lunar mantle, crust, and regolith: Abundances, distributions, processes, and reservoirs. <i>American Mineralogist</i> , 2015, 100, 1668-1707.	1.9	160
53	Density and compressibility of the molten lunar picritic glasses: Implications for the roles of Ti and Fe in the structures of silicate melts. <i>Geochimica Et Cosmochimica Acta</i> , 2015, 149, 1-20.	3.9	42
54	Volatile abundances of coexisting merrillite and apatite in the martian meteorite Shergotty: Implications for merrillite in hydrous magmas. <i>American Mineralogist</i> , 2014, 99, 1347-1354.	1.9	54

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55	Apatites in lunar KREEP basalts: The missing link to understanding the H isotope systematics of the Moon. <i>Geology</i> , 2014, 42, 363-366.	4.4	98
56	Thermal expansion of fluorapatite-hydroxylapatite crystalline solutions. <i>American Mineralogist</i> , 2014, 99, 2171-2175.	1.9	15
57	Early accretion of water in the inner solar system from a carbonaceous chondrite-like source. <i>Science</i> , 2014, 346, 623-626.	12.6	128
58	A novel technique for fluorapatite synthesis and the thermodynamic mixing behavior of F-OH apatite crystalline solutions. <i>American Mineralogist</i> , 2014, 99, 890-897.	1.9	16
59	Solid solution in the fluorapatite-chlorapatite binary system: High-precision crystal structure refinements of synthetic F-Cl apatite. <i>American Mineralogist</i> , 2014, 99, 369-376.	1.9	28
60	The origin of water in the primitive Moon as revealed by the lunar highlands samples. <i>Earth and Planetary Science Letters</i> , 2014, 390, 244-252.	4.4	118
61	Phosphate minerals in LL chondrites: A record of the action of fluids during metamorphism on ordinary chondrite parent bodies. <i>Geochimica Et Cosmochimica Acta</i> , 2014, 132, 120-140.	3.9	80
62	Inventory of H ₂ O in the ancient Martian regolith from Northwest Africa 7034: The important role of Fe oxides. <i>Geophysical Research Letters</i> , 2014, 41, 8235-8244.	4.0	43
63	Unique Meteorite from Early Amazonian Mars: Water-Rich Basaltic Breccia Northwest Africa 7034. <i>Science</i> , 2013, 339, 780-785.	12.6	340
64	A hydrogen-based oxidation mechanism relevant to planetary formation. <i>Earth and Planetary Science Letters</i> , 2013, 380, 88-97.	4.4	115
65	A petrogenetic model for the comagmatic origin of chassignites and nakhlites: Inferences from chlorine-rich minerals, petrology, and geochemistry. <i>Meteoritics and Planetary Science</i> , 2013, 48, 819-853.	1.6	116
66	Is Mercury a volatile-rich planet?. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	119
67	Chromite symplectites in Mg-suite troctolite 76535 as evidence for infiltration metasomatism of a lunar layered intrusion. <i>Geochimica Et Cosmochimica Acta</i> , 2012, 87, 154-177.	3.9	56
68	Hydrous melting of the martian mantle produced both depleted and enriched shergottites. <i>Geology</i> , 2012, 40, 683-686.	4.4	193
69	Fluorine and chlorine abundances in lunar apatite: Implications for heterogeneous distributions of magmatic volatiles in the lunar interior. <i>Geochimica Et Cosmochimica Acta</i> , 2011, 75, 5073-5093.	3.9	140
70	Mercury surface composition: Integrating petrologic modeling and remote sensing data to place constraints on FeO abundance. <i>Icarus</i> , 2010, 209, 301-313.	2.5	31
71	Detection of structurally bound hydroxyl in fluorapatite from Apollo Mare basalt 15058,128 using TOF-SIMS. <i>American Mineralogist</i> , 2010, 95, 1141-1150.	1.9	116
72	Nominally hydrous magmatism on the Moon. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 11223-11228.	7.1	257

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73	Hydrous magmatism on Mars: A source of water for the surface and subsurface during the Amazonian. <i>Earth and Planetary Science Letters</i> , 2010, 292, 132-138.	4.4	104
74	Linking the Chassigny meteorite and the Martian surface rock Backstay: Insights into igneous crustal differentiation processes on Mars. <i>Meteoritics and Planetary Science</i> , 2009, 44, 853-869.	1.6	33
75	Hydrothermal jarosite and hematite in a pyroxene-hosted melt inclusion in martian meteorite Miller Range (MIL) 03346: Implications for magmatic-hydrothermal fluids on Mars. <i>Geochimica Et Cosmochimica Acta</i> , 2009, 73, 4907-4917.	3.9	102
76	Solid-state NMR and IR spectroscopic investigation of the role of structural water and F in carbonate-rich fluorapatite. <i>American Mineralogist</i> , 2009, 94, 507-516.	1.9	63
77	Synthesis and characterization of low-OH fluor-chlorapatite: A single-crystal XRD and NMR spectroscopic study. <i>American Mineralogist</i> , 2008, 93, 210-216.	1.9	41
78	Maskelynite-hosted apatite in the Chassigny meteorite: Insights into late-stage magmatic volatile evolution in martian magmas. <i>American Mineralogist</i> , 2008, 93, 676-684.	1.9	84
79	Compositional diversity and stratification of the Martian crust: Inferences from crystallization experiments on the picobasalt Humphrey from Gusev Crater, Mars. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	47
80	Alkalic parental magmas for chassignites?. <i>Meteoritics and Planetary Science</i> , 2007, 42, 979-992.	1.6	69