

Mark H Thiemens

List of Publications by Year in descending order

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#	ARTICLE	IF	CITATIONS
1	Biologically Induced Changes in the Partitioning of Submicron Particulates Between Bulk Seawater and the Sea Surface Microlayer. <i>Geophysical Research Letters</i> , 2022, 49, e2021GL094587.	4.0	3
2	Cosmogenic radiosulfur tracking of solar activity and the strong and long-lasting El Niño events. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022, 119, e2121550119.	7.1	5
3	Isotopic Insights into Organic Composition Differences between Supermicron and Submicron Sea Spray Aerosol. <i>Environmental Science & Technology</i> , 2022, 56, 9947-9958.	10.0	4
4	Mass-independent fractionation of oxygen isotopes during thermal decomposition of divalent metal carbonates: Crystallographic influence, potential mechanism and cosmochemical significance. <i>Chemical Geology</i> , 2021, 586, 120500.	3.3	6
5	Discoveries of Mass Independent Isotope Effects in the Solar System: Past, Present and Future. <i>Reviews in Mineralogy and Geochemistry</i> , 2021, 86, 35-95.	4.8	23
6	A Complete Isotope ($\delta^{15}\text{N}$, $\delta^{18}\text{O}$, $\delta^{17}\text{O}$) Investigation of Atmospherically Deposited Nitrate in Glacial-Hydrologic Systems Across the Third Pole Region. <i>Journal of Geophysical Research D: Atmospheres</i> , 2020, 125, e2019JD031878.	3.3	6
7	Biological Influence on $\delta^{13}\text{C}$ and Organic Composition of Nascent Sea Spray Aerosol. <i>ACS Earth and Space Chemistry</i> , 2020, 4, 1686-1699.	2.7	15
8	A Simple Elemental Sulfur Reduction Method for Isotopic Analysis and Pilot Experimental Tests of Symmetry-Dependent Sulfur Isotope Effects in Planetary Processes. <i>Geochemistry, Geophysics, Geosystems</i> , 2020, 21, e2020GC009051.	2.5	7
9	Superconductivity found in meteorites. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 7645-7649.	7.1	26
10	Assessing the Seasonal Dynamics of Nitrate and Sulfate Aerosols at the South Pole Utilizing Stable Isotopes. <i>Journal of Geophysical Research D: Atmospheres</i> , 2019, 124, 8161-8177.	3.3	21
11	Measurements of ^{129}I in the Pacific Ocean at Scripps Pier and Pacific Northwest sites: A search for effects from the 2011 Fukushima Daiichi Nuclear Power Plant accident and Hanford. <i>Science of the Total Environment</i> , 2019, 689, 1023-1029.	8.0	11
12	Linking atmospheric pollution to cryospheric change in the Third Pole region: current progress and future prospects. <i>National Science Review</i> , 2019, 6, 796-809.	9.5	271
13	Use of Isotope Effects To Understand the Present and Past of the Atmosphere and Climate and Track the Origin of Life. <i>Angewandte Chemie</i> , 2019, 131, 6898-6916.	2.0	4
14	Use of Isotope Effects To Understand the Present and Past of the Atmosphere and Climate and Track the Origin of Life. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 6826-6844.	13.8	22
15	The discovery of chemically produced mass independent isotope effects: The physical chemistry basis and applications to the early solar system, planetary atmospheres, and the origin of life. <i>Meteoritics and Planetary Science</i> , 2019, 54, 231-248.	1.6	4
16	Accurate Quantification of Radiosulfur in Chemically Complex Atmospheric Samples. <i>Analytical Chemistry</i> , 2018, 90, 2884-2890.	6.5	11
17	Carbon and oxygen isotopic fractionation in the products of low-temperature VUV photodissociation of carbon monoxide. <i>Chemical Physics</i> , 2018, 514, 78-86.	1.9	8
18	Five-S-isotope evidence of two distinct mass-independent sulfur isotope effects and implications for the modern and Archean atmospheres. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 8541-8546.	7.1	37

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19	Atmospheric sulfur isotopic anomalies recorded at Mt. Everest across the Anthropocene. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 6964-6969.	7.1	20
20	Vertically uniform formation pathways of tropospheric sulfate aerosols in East China detected from triple stable oxygen and radiogenic sulfur isotopes. Geophysical Research Letters, 2017, 44, 5187-5196.	4.0	20
21	Simple Method for High-Sensitivity Determination of Cosmogenic ³⁵ S in Snow and Water Samples Collected from Remote Regions. Analytical Chemistry, 2017, 89, 4116-4123.	6.5	11
22	Oxygen isotope anomaly in tropospheric CO ₂ and implications for CO ₂ residence time in the atmosphere and gross primary productivity. Scientific Reports, 2017, 7, 13180.	3.3	24
23	Quantification of Gas-to-Particle Conversion Rates of Sulfur in the Terrestrial Atmosphere Using High-Sensitivity Measurements of Cosmogenic ³⁵ S. ACS Earth and Space Chemistry, 2017, 1, 324-333.	2.7	6
24	Resolving the impact of stratosphere-to-troposphere transport on the sulfur cycle and surface ozone over the Tibetan Plateau using a cosmogenic ³⁵ S tracer. Journal of Geophysical Research D: Atmospheres, 2016, 121, 439-456.	3.3	32
25	Unexpected high ³⁵ S concentration revealing strong downward transport of stratospheric air during the monsoon transitional period in East Asia. Geophysical Research Letters, 2016, 43, 2315-2322.	4.0	13
26	Detection of deep stratospheric intrusions by cosmogenic ³⁵ S. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 11131-11136.	7.1	20
27	Carbonate formation events in ALH 84001 trace the evolution of the Martian atmosphere. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 336-341.	7.1	33
28	Nanoscale infrared spectroscopy as a non-destructive probe of extraterrestrial samples. Nature Communications, 2014, 5, 5445.	12.8	52
29	Large sulfur-isotope anomaly in nonvolcanic sulfate aerosol and its implications for the Archean atmosphere. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 11979-11983.	7.1	36
30	Massive isotopic effect in vacuum UV photodissociation of N ₂ and implications for meteorite data. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 14704-14709.	7.1	50
31	Decadal ¹⁷ O record of tropospheric CO ₂ : Verification of a stratospheric component in the troposphere. Journal of Geophysical Research D: Atmospheres, 2014, 119, 6221-6229.	3.3	28
32	Comment on "Climatic impact of the long-lasting Laki eruption: Inapplicability of mass-independent sulfur isotope composition measurements" by Schmidt et al.. Journal of Geophysical Research D: Atmospheres, 2014, 119, 6629-6635.	3.3	3
33	Cosmogenic ³⁵ S measurements in the Tibetan Plateau to quantify glacier snowmelt. Journal of Geophysical Research D: Atmospheres, 2014, 119, 4125-4135.	3.3	11
34	Introduction to Chemistry and Applications in Nature of Mass Independent Isotope Effects Special Feature. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 17631-17637.	7.1	27
35	Sulfur isotopic fractionation in vacuum UV photodissociation of hydrogen sulfide and its potential relevance to meteorite analysis. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 17650-17655.	7.1	32
36	Tales of volcanoes and El-Niño southern oscillations with the oxygen isotope anomaly of sulfate aerosol. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 17662-17667.	7.1	26

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37	Mass-Independent Oxygen Isotopic Partitioning During Gas-Phase SiO ₂ Formation. <i>Science</i> , 2013, 342, 463-466.	12.6	37
38	Turekian reflections. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 16289-16290.	7.1	1
39	Detection of radioactive ³⁵ S at Fukushima and other Japanese sites. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 1020-1027.	3.3	7
40	Two likely stratospheric volcanic eruptions in the 1450s C.E. found in a bipolar, subannually dated 800 year ice core record. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 7459-7466.	3.3	41
41	Seasonal variations in ³⁵ S and ¹⁷ O of sulfate aerosols on the Antarctic plateau. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 9444-9455.	3.3	21
42	Oxygen isotope fractionation in the vacuum ultraviolet photodissociation of carbon monoxide: Wavelength, pressure, and temperature dependency. <i>Journal of Chemical Physics</i> , 2012, 137, 024309.	3.0	16
43	The Physical Chemistry of Mass-Independent Isotope Effects and Their Observation in Nature. <i>Annual Review of Physical Chemistry</i> , 2012, 63, 155-177.	10.8	64
44	Sulfur isotope evidence of little or no stratospheric impact by the 1783 Laki volcanic eruption. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	27
45	Measurements of ³⁵ S in the marine boundary layer at La Jolla, California: A new technique for tracing air mass mixing during Santa Ana events. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	15
46	Differentiating sulfate aerosol oxidation pathways for varying source altitudes using ³⁵ S and ¹⁷ O tracers. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	14
47	James R. Arnold: From the Manhattan Project to the moon and beyond. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 4339-4340.	7.1	0
48	Cosmogenic ³⁵ S: A unique tracer to Antarctic atmospheric chemistry and the polar vortex. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	17
49	The Soret effect and isotopic fractionation in high-temperature silicate melts. <i>Nature</i> , 2011, 473, 70-73.	27.8	75
50	Evidence of neutron leakage at the Fukushima nuclear plant from measurements of radioactive ³⁵ S in California. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 14422-14425.	7.1	42
51	On the strong and selective isotope effect in the UV excitation of N ₂ with implications toward the nebula and Martian atmosphere. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 6020-6025.	7.1	48
52	Detection of oxygen isotopic anomaly in terrestrial atmospheric carbonates and its implications to Mars. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 20213-20218.	7.1	28
53	Optimized low-level liquid scintillation spectroscopy of ³⁵ S for atmospheric and biogeochemical chemistry applications. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 5311-5316.	7.1	26
54	Response to Comments on "Experimental Test of Self-Shielding in Vacuum Ultraviolet Photodissociation of CO". <i>Science</i> , 2009, 324, 1516-1516.	12.6	11

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55	Cold decade (AD 1810–1819) caused by Tambora (1815) and another (1809) stratospheric volcanic eruption. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	131
56	Anomalous sulfur isotope compositions of volcanic sulfate over the last millennium in Antarctic ice cores. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	86
57	Discovery and measurement of an isotopically distinct source of sulfate in Earth's atmosphere. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 12769-12773.	7.1	49
58	Experimental Test of Self-Shielding in Vacuum Ultraviolet Photodissociation of CO. <i>Science</i> , 2008, 321, 1328-1331.	12.6	68
59	Mass independently fractionated sulfur components in chondrites. <i>Geochimica Et Cosmochimica Acta</i> , 2007, 71, 1341-1354.	3.9	32
60	Non-mass-dependent oxygen isotopic fractionation in smokes produced in an electrical discharge. <i>Meteoritics and Planetary Science</i> , 2007, 42, 1429-1439.	1.6	12
61	Mass-Independent Sulfur Isotopic Compositions in Stratospheric Volcanic Eruptions. <i>Science</i> , 2007, 315, 84-87.	12.6	143
62	A record of ozone variability in South Pole Antarctic snow: Role of nitrate oxygen isotopes. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	58
63	Isotopic constraints on non-photochemical sulfate production in the Arctic winter. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	44
64	HISTORY AND APPLICATIONS OF MASS-INDEPENDENT ISOTOPE EFFECTS. <i>Annual Review of Earth and Planetary Sciences</i> , 2006, 34, 217-262.	11.0	336
65	Photochemical Mass-Independent Sulfur Isotopes in Achondritic Meteorites. <i>Science</i> , 2005, 309, 1062-1065.	12.6	61
66	Tracing Atmospheric Nitrate Deposition in a Complex Semiarid Ecosystem Using $\delta^{17}\text{O}$. <i>Environmental Science & Technology</i> , 2004, 38, 2175-2181.	10.0	134
67	Long term atmospheric deposition as the source of nitrate and other salts in the Atacama Desert, Chile: New evidence from mass-independent oxygen isotopic compositions. <i>Geochimica Et Cosmochimica Acta</i> , 2004, 68, 4023-4038.	3.9	271
68	Multiple sulphur isotopic interpretations of biosynthetic pathways: implications for biological signatures in the sulphur isotope record. <i>Geobiology</i> , 2003, 1, 27-36.	2.4	234
69	Sulfate oxygen-17 anomaly in an Oligocene ash bed in mid-North America: Was it the dry fogs?. <i>Geophysical Research Letters</i> , 2003, 30, .	4.0	30
70	First measurements and modeling of $\delta^{17}\text{O}$ in atmospheric nitrate. <i>Geophysical Research Letters</i> , 2003, 30, .	4.0	272
71	Reply to comment by D. Krankowsky et al. on "Low-pressure dependency of the isotopic enrichment in ozone: Stratospheric implications" by S. K. Bhattacharya et al.. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	1
72	Mass-independent sulfur isotopic compositions in present-day sulfate aerosols. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	69

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73	Evidence from sulfate mass independent oxygen isotopic compositions of dramatic changes in atmospheric oxidation following massive volcanic eruptions. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	60
74	Low-pressure dependency of the isotopic enrichment in ozone: Stratospheric implications. <i>Journal of Geophysical Research</i> , 2002, 107, ACH 4-1-ACH 4-10.	3.3	11
75	Mass-independent isotope effects and their use in understanding natural processes. <i>Israel Journal of Chemistry</i> , 2002, 42, 43-54.	2.3	19
76	Mass independent oxygen isotopic composition of atmospheric sulfate: Origin and implications for the present and past atmosphere of Earth and Mars. <i>Geophysical Research Letters</i> , 2001, 28, 1783-1786.	4.0	42
77	The $\delta^{17}\text{O}$ and $\delta^{18}\text{O}$ measurements of atmospheric sulfate from a coastal and high alpine region: A mass-independent isotopic anomaly. <i>Journal of Geophysical Research</i> , 2001, 106, 17359-17373.	3.3	73
78	Observation of wavelength-sensitive mass-independent sulfur isotope effects during SO_2 photolysis: Implications for the early atmosphere. <i>Journal of Geophysical Research</i> , 2001, 106, 32829-32839.	3.3	423
79	Sulfate oxygen-17 anomalies in desert varnishes. <i>Geochimica Et Cosmochimica Acta</i> , 2001, 65, 2029-2036.	3.9	68
80	Sulfur and Oxygen Isotope Analysis of Sulfate at Micromole Levels Using a Pyrolysis Technique in a Continuous Flow System. <i>Analytical Chemistry</i> , 2001, 73, 4457-4462.	6.5	61
81	Evidence of atmospheric sulphur in the martian regolith from sulphur isotopes in meteorites. <i>Nature</i> , 2000, 404, 50-52.	27.8	264
82	Anomalous ^{17}O compositions in massive sulphate deposits on the Earth. <i>Nature</i> , 2000, 406, 176-178.	27.8	115
83	Origins of sulphate in Antarctic dry-valley soils as deduced from anomalous ^{17}O compositions. <i>Nature</i> , 2000, 407, 499-502.	27.8	103
84	A ^{33}S enrichment in ureilite meteorites: evidence for a nebular sulfur component. <i>Geochimica Et Cosmochimica Acta</i> , 2000, 64, 1819-1825.	3.9	66
85	Formation of $\text{C}_{\text{m}}\text{S}_{\text{n}}$ compounds by photopolymerization of CS_2 in the atmosphere of Jupiter. <i>Meteoritics and Planetary Science</i> , 2000, 35, 355-361.	1.6	14
86	Laboratory oxygen isotopic study of sulfur (IV) oxidation: Origin of the mass-independent oxygen isotopic anomaly in atmospheric sulfates and sulfate mineral deposits on Earth. <i>Journal of Geophysical Research</i> , 2000, 105, 29079-29088.	3.3	136
87	Atmospheric Influence of Earth's Earliest Sulfur Cycle. <i>Science</i> , 2000, 289, 756-758.	12.6	1,543
88	A new class of oxygen isotopic fractionation in photodissociation of carbon dioxide: Potential Implications for atmospheres of Mars and Earth. <i>Geophysical Research Letters</i> , 2000, 27, 1459-1462.	4.0	69
89	Oxygen cycle of the Martian atmosphere-regolith system: $\delta^{17}\text{O}$ of secondary phases in Nakhla and Lafayette. <i>Journal of Geophysical Research</i> , 2000, 105, 11991-11997.	3.3	66
90	Generation of O_2 from BaSO_4 Using a CO_2 Laser Fluorination System for Simultaneous Analysis of $\delta^{18}\text{O}$ and $\delta^{17}\text{O}$. <i>Analytical Chemistry</i> , 2000, 72, 4029-4032.	6.5	84

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91	Triple-isotope composition of atmospheric oxygen as a tracer of biosphere productivity. <i>Nature</i> , 1999, 400, 547-550.	27.8	281
92	Analytical procedure to determine both $\delta^{18}\text{O}$ and $\delta^{17}\text{O}$ of H_2O_2 in natural water and first measurements. <i>Atmospheric Environment</i> , 1999, 33, 3683-3690.	4.1	109
93	Mass-Independent Oxygen Isotope (^{16}O , ^{17}O , ^{18}O) Fractionation Found in Hx, OxReactions. <i>Journal of Physical Chemistry A</i> , 1999, 103, 9221-9229.	2.5	48
94	Large Mass Independent Sulfur Isotope Fractionations during the Photopolymerization of $^{12}\text{CS}_2$ and $^{13}\text{CS}_2$. <i>Journal of Physical Chemistry A</i> , 1999, 103, 2477-2480.	2.5	52
95	$^{17}\text{O}/^{16}\text{O}$ and $^{18}\text{O}/^{16}\text{O}$ isotope measurements of atmospheric carbon monoxide and its sources. <i>Geophysical Research Letters</i> , 1998, 25, 3509-3512.	4.0	43
96	Atmosphere-Surface Interactions on Mars: ^{17}O Measurements of Carbonate from ALH 84001. <i>Science</i> , 1998, 280, 1580-1582.	12.6	135
97	Comparative Study of ^{17}O and ^{18}O Isotope Effects As a Probe for Dioxygen Activation: An Application to the Soybean Lipoxygenase Reaction. <i>Journal of the American Chemical Society</i> , 1997, 119, 11357-11361.	13.7	26
98	The isotopic composition of tropospheric ozone in three environments. <i>Journal of Geophysical Research</i> , 1997, 102, 25395-25404.	3.3	194
99	Sulfur and Hydrogen Isotope Anomalies in Meteorite Sulfonic Acids. <i>Science</i> , 1997, 277, 1072-1074.	12.6	80
100	The $^{18}\text{O}/^{16}\text{O}$ and $^{17}\text{O}/^{16}\text{O}$ Ratios in Atmospheric Nitrous Oxide: A Mass-Independent Anomaly. <i>Science</i> , 1997, 278, 1774-1776.	12.6	123
101	Observation of a mass independent oxygen isotopic composition in terrestrial stratospheric CO_2 , the link to ozone chemistry, and the possible occurrence in the Martian atmosphere. <i>Geophysical Research Letters</i> , 1995, 22, 255-257.	4.0	82
102	Isotopic composition and concentration of sulfur in carbonaceous chondrites. <i>Geochimica Et Cosmochimica Acta</i> , 1993, 57, 3159-3169.	3.9	107
103	Variations of the isotopic composition of sulfur in enstatite and ordinary chondrites. <i>Geochimica Et Cosmochimica Acta</i> , 1993, 57, 3171-3176.	3.9	87
104	Systematic study of sulfur isotopic composition in iron meteorites and the occurrence of excess ^{33}S and ^{36}S . <i>Geochimica Et Cosmochimica Acta</i> , 1991, 55, 2671-2679.	3.9	67
105	Pressure dependency for heavy isotope enhancement in ozone formation. <i>Geophysical Research Letters</i> , 1990, 17, 717-719.	4.0	101
106	A mass-independent sulfur isotope effect in the nonthermal formation of S_2F_{10} . <i>Journal of Chemical Physics</i> , 1989, 90, 6099-6109.	3.0	31
107	Isotopic fractionation in ozone decomposition. <i>Geophysical Research Letters</i> , 1988, 15, 9-12.	4.0	34
108	New experimental evidence for the mechanism for production of isotopically heavy O_3 . <i>Geophysical Research Letters</i> , 1988, 15, 639-642.	4.0	74

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109	Production of isotopically heavy ozone by ultraviolet light photolysis of O ₂ . Geophysical Research Letters, 1987, 14, 624-627.	4.0	68
110	A non-mass-dependent oxygen isotope effect in the production of ozone from molecular oxygen: The role of molecular symmetry in isotope chemistry. Journal of Chemical Physics, 1986, 84, 2129-2136.	3.0	155
111	Meteoritics: New isotopic evidence of early Solar System processes. Nature, 1983, 306, 18-19.	27.8	2
112	A non-mass-dependent isotope effect in the production of ozone from molecular oxygen. Journal of Chemical Physics, 1983, 78, 892-895.	3.0	107