Mark H Thiemens

List of Publications by Year
in descending order

112 papers	8,672 citations	47 h-index 47006	91 g-index 43889
112 all docs	112 docs citations	112 times ranked	5310 citing authors

#	Article	IF	Citations
1	Atmospheric Influence of Earth's Earliest Sulfur Cycle. Science, 2000, 289, 756-758.	12.6	1,543
2	Observation of wavelength-sensitive mass-independent sulfur isotope effects during SO2photolysis: Implications for the early atmosphere. Journal of Geophysical Research, 2001, 106, 32829-32839.	3.3	423
3	HISTORY AND APPLICATIONS OF MASS-INDEPENDENT ISOTOPE EFFECTS. Annual Review of Earth and Planetary Sciences, 2006, 34, 217-262.	11.0	336
4	Triple-isotope composition of atmospheric oxygen as a tracer of biosphere productivity. Nature, 1999, 400, 547-550.	27.8	281
5	First measurements and modeling of Î”17O in atmospheric nitrate. Geophysical Research Letters, 2003, 30, .	4.0	272
6	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. Geochimica Et Cosmochimica Acta, 2004, 68, 4023-4038.	3.9	271
7	Linking atmospheric pollution to cryospheric change in the Third Pole region: current progress and future prospects. National Science Review, 2019, 6, 796-809.	9.5	271
8	Evidence of atmospheric sulphur in the martian regolith from sulphur isotopes in meteorites. Nature, 2000, 404, 50-52.	27.8	264
9	Multiple sulphur isotopic interpretations of biosynthetic pathways: implications for biological signatures in the sulphur isotope record. Geobiology, 2003, 1, 27-36.	2.4	234
10	The isotopic composition of tropospheric ozone in three environments. Journal of Geophysical Research, 1997, 102, 25395-25404.	3.3	194
11	A nonâ€massâ€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
12	Mass-Independent Sulfur Isotopic Compositions in Stratospheric Volcanic Eruptions. Science, 2007, 315, 84-87.	12.6	143
13	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. Journal of Geophysical Research, 2000, 105, 29079-29088.	3.3	136
14	Atmosphere-Surface Interactions on Mars: 17O Measurements of Carbonate from ALH 84001 . Science, 1998, 280, 1580-1582.	12.6	135
15	Tracing Atmospheric Nitrate Deposition in a Complex Semiarid Ecosystem Using Î”17O. Environmental Science & Technology, 2004, 38, 2175-2181.	10.0	134
16	Cold decade (AD 1810â€“1819) caused by Tambora (1815) and another (1809) stratospheric volcanic eruption. Geophysical Research Letters, 2009, 36, .	4.0	131
17	The18O/16O and17O/16O Ratios in Atmospheric Nitrous Oxide: A Mass-Independent Anomaly. Science, 1997, 278, 1774-1776.	12.6	123
18	Anomalous 17O compositions in massive sulphate deposits on the Earth. Nature, 2000, 406, 176-178.	27.8	115

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19	Analytical procedure to determine both Î´18O and Î´17O of H2O2 in natural water and first measurements. Atmospheric Environment, 1999, 33, 3683-3690.	4.1	109
20	A nonâ€massâ€dependent isotope effect in the production of ozone from molecular oxygen. Journal of Chemical Physics, 1983, 78, 892-895.	3.0	107
21	Isotopic composition and concentration of sulfur in carbonaceous chondrites. Geochimica Et Cosmochimica Acta, 1993, 57, 3159-3169.	3.9	107
22	Origins of sulphate in Antarctic dry-valley soils as deduced from anomalous 17O compositions. Nature, 2000, 407, 499-502.	27.8	103
23	Pressure dependency for heavy isotope enhancement in ozone formation. Geophysical Research Letters, 1990, 17, 717-719.	4.0	101
24	Variations of the isotopic composition of sulfur in enstatite and ordinary chondrites. Geochimica Et Cosmochimica Acta, 1993, 57, 3171-3176.	3.9	87
25	Anomalous sulfur isotope compositions of volcanic sulfate over the last millennium in Antarctic ice cores. Journal of Geophysical Research, 2008, 113, .	3.3	86
26	Generation of O2from BaSO4Using a CO2â^'Laser Fluorination System for Simultaneous Analysis of Î´18O and Î´17O. Analytical Chemistry, 2000, 72, 4029-4032.	6.5	84
27	Observation of a mass independent oxygen isotopic composition in terrestrial stratospheric CO2, the link to ozone chemistry, and the possible occurrence in the Martian atmosphere. Geophysical Research Letters, 1995, 22, 255-257.	4.0	82
28	Sulfur and Hydrogen Isotope Anomalies in Meteorite Sulfonic Acids. Science, 1997, 277, 1072-1074.	12.6	80
29	The Soret effect and isotopic fractionation in high-temperature silicate melts. Nature, 2011, 473, 70-73.	27.8	75
30	New experimental evidence for the mechanism for production of isotopically heavy O₃. Geophysical Research Letters, 1988, 15, 639-642.	4.0	74
31	The Î´17O and Î´18O measurements of atmospheric sulfate from a coastal and high alpine region: A mass-independent isotopic anomaly. Journal of Geophysical Research, 2001, 106, 17359-17373.	3.3	73
32	A new class of oxygen isotopic fractionation in photodissociation of carbon dioxide: Potential Implications for atmospheres of Mars and Earth. Geophysical Research Letters, 2000, 27, 1459-1462.	4.0	69
33	Mass-independent sulfur isotopic compositions in present-day sulfate aerosols. Journal of Geophysical Research, 2003, 108, .	3.3	69
34	Production of isotopically heavy ozone by ultraviolet light photolysis of O₂. Geophysical Research Letters, 1987, 14, 624-627.	4.0	68
35	Sulfate oxygen-17 anomalies in desert varnishes. Geochimica Et Cosmochimica Acta, 2001, 65, 2029-2036.	3.9	68
36	Experimental Test of Self-Shielding in Vacuum Ultraviolet Photodissociation of CO. Science, 2008, 321, 1328-1331.	12.6	68

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37	Systematic study of sulfur isotopic composition in iron meteorites and the occurrence of excess 33S and 36S. Geochimica Et Cosmochimica Acta, 1991, 55, 2671-2679.	3.9	67
38	A 33S enrichment in ureilite meteorites: evidence for a nebular sulfur component. Geochimica Et Cosmochimica Acta, 2000, 64, 1819-1825.	3.9	66
39	Oxygen cycle of the Martian atmosphere-regolith system: Î”17O of secondary phases in Nakhla and Lafayette. Journal of Geophysical Research, 2000, 105, 11991-11997.	3.3	66
40	The Physical Chemistry of Mass-Independent Isotope Effects and Their Observation in Nature. Annual Review of Physical Chemistry, 2012, 63, 155-177.	10.8	64
41	Sulfur and Oxygen Isotope Analysis of Sulfate at Micromole Levels Using a Pyrolysis Technique in a Continuous Flow System. Analytical Chemistry, 2001, 73, 4457-4462.	6.5	61
42	Photochemical Mass-Independent Sulfur Isotopes in Achondritic Meteorites. Science, 2005, 309, 1062-1065.	12.6	61
43	Evidence from sulfate mass independent oxygen isotopic compositions of dramatic changes in atmospheric oxidation following massive volcanic eruptions. Journal of Geophysical Research, 2003, 108, .	3.3	60
44	A record of ozone variability in South Pole Antarctic snow: Role of nitrate oxygen isotopes. Journal of Geophysical Research, 2007, 112, .	3.3	58
45	Large Mass Independent Sulfur Isotope Fractionations during the Photopolymerization of 12CS2 and 13CS2. Journal of Physical Chemistry A, 1999, 103, 2477-2480.	2.5	52
46	Nanoscale infrared spectroscopy as a non-destructive probe of extraterrestrial samples. Nature Communications, 2014, 5, 5445.	12.8	52
47	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
48	Discovery and measurement of an isotopically distinct source of sulfate in Earth's atmosphere. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 12769-12773.	7.1	49
49	Mass-Independent Oxygen Isotope (16O,17O,18O) Fractionation Found in Hx, OxReactions. Journal of Physical Chemistry A, 1999, 103, 9221-9229.	2.5	48
50	On the strong and selective isotope effect in the UV excitation of N ₂ with implications toward the nebula and Martian atmosphere. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 6020-6025.	7.1	48
51	Isotopic constraints on non-photochemical sulfate production in the Arctic winter. Geophysical Research Letters, 2006, 33, .	4.0	44
52	17O/16O and18O/16O isotope measurements of atmospheric carbon monoxide and its sources. Geophysical Research Letters, 1998, 25, 3509-3512.	4.0	43
53	Mass independent oxygen isotopic composition of atmospheric sulfate: Origin and implications for the present and past atmosphere of Earth and Mars. Geophysical Research Letters, 2001, 28, 1783-1786.	4.0	42
54	Evidence of neutron leakage at the Fukushima nuclear plant from measurements of radioactive³⁵S in California. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 14422-14425.	7.1	42

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55	Two likely stratospheric volcanic eruptions in the 1450s C.E. found in a bipolar, subannually dated 800 year ice core record. Journal of Geophysical Research D: Atmospheres, 2013, 118, 7459-7466.	3.3	41
56	Mass-Independent Oxygen Isotopic Partitioning During Gas-Phase SiO ₂ Formation. Science, 2013, 342, 463-466.	12.6	37
57	Five-S-isotope evidence of two distinct mass-independent sulfur isotope effects and implications for the modern and Archean atmospheres. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 8541-8546.	7.1	37
58	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
59	Isotopic fractionation in ozone decomposition. Geophysical Research Letters, 1988, 15, 9-12.	4.0	34
60	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
61	Mass independently fractionated sulfur components in chondrites. Geochimica Et Cosmochimica Acta, 2007, 71, 1341-1354.	3.9	32
62	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
63	Resolving the impact of stratosphereâ€toâ€troposphere transport on the sulfur cycle and surface ozone over the Tibetan Plateau using a cosmogenic ³⁵S tracer. Journal of Geophysical Research D: Atmospheres, 2016, 121, 439-456.	3.3	32
64	A massâ€independent sulfur isotope effect in the nonthermal formation of S2F10. Journal of Chemical Physics, 1989, 90, 6099-6109.	3.0	31
65	Sulfate oxygen-17 anomaly in an Oligocene ash bed in mid-North America: Was it the dry fogs?. Geophysical Research Letters, 2003, 30, .	4.0	30
66	Detection of oxygen isotopic anomaly in terrestrial atmospheric carbonates and its implications to Mars. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 20213-20218.	7.1	28
67	Decadal Î”¹⁷O record of tropospheric CO₂: Verification of a stratospheric component in the troposphere. Journal of Geophysical Research D: Atmospheres, 2014, 119, 6221-6229.	3.3	28
68	Sulfur isotope evidence of little or no stratospheric impact by the 1783 Laki volcanic eruption. Geophysical Research Letters, 2012, 39, .	4.0	27
69	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
70	Comparative Study of17O and18O Isotope Effects As a Probe for Dioxygen Activation:Â Application to the Soybean Lipoxygenase Reaction#. Journal of the American Chemical Society, 1997, 119, 11357-11361.	13.7	26
71	Optimized low-level liquid scintillation spectroscopy of ³⁵ S for atmospheric and biogeochemical chemistry applications. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 5311-5316.	7.1	26
72	Tales of volcanoes and El-NiÃ±o 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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73	Superconductivity found in meteorites. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 7645-7649.	7.1	26
74	Oxygen isotope anomaly in tropospheric CO2 and implications for CO2 residence time in the atmosphere and gross primary productivity. Scientific Reports, 2017, 7, 13180.	3.3	24
75	Discoveries of Mass Independent Isotope Effects in the Solar System: Past, Present and Future. Reviews in Mineralogy and Geochemistry, 2021, 86, 35-95.	4.8	23
76	Use of Isotope Effects To Understand the Present and Past of the Atmosphere and Climate and Track the Origin of Life. Angewandte Chemie - International Edition, 2019, 58, 6826-6844.	13.8	22
77	Seasonal variations in ³⁵S and Î”¹⁷O of sulfate aerosols on the Antarctic plateau. Journal of Geophysical Research D: Atmospheres, 2013, 118, 9444-9455.	3.3	21
78	Assessing the Seasonal Dynamics of Nitrate and Sulfate Aerosols at the South Pole Utilizing Stable Isotopes. Journal of Geophysical Research D: Atmospheres, 2019, 124, 8161-8177.	3.3	21
79	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
80	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
81	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
82	Mass-independent isotope effects and their use in understanding natural processes. Israel Journal of Chemistry, 2002, 42, 43-54.	2.3	19
83	Cosmogenic³⁵S: A unique tracer to Antarctic atmospheric chemistry and the polar vortex. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	17
84	Oxygen isotope fractionation in the vacuum ultraviolet photodissociation of carbon monoxide: Wavelength, pressure, and temperature dependency. Journal of Chemical Physics, 2012, 137, 024309.	3.0	16
85	Measurements of ³⁵S in the marine boundary layer at La Jolla, California: A new technique for tracing air mass mixing during Santa Ana events. Journal of Geophysical Research, 2012, 117, .	3.3	15
86	Biological Influence on Î´¹³C and Organic Composition of Nascent Sea Spray Aerosol. ACS Earth and Space Chemistry, 2020, 4, 1686-1699.	2.7	15
87	Formation of C_mS_n compounds by photopolymerization of CS₂ in the atmosphere of Jupiter. Meteoritics and Planetary Science, 2000, 35, 355-361.	1.6	14
88	Differentiating sulfate aerosol oxidation pathways for varying source altitudes using ³⁵S and Î”¹⁷O tracers. Journal of Geophysical Research, 2012, 117, .	3.3	14
89	Unexpected high ³⁵S 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
90	Nonâ€massâ€dependent oxygen isotopic fractionation in smokes produced in an electrical discharge. Meteoritics and Planetary Science, 2007, 42, 1429-1439.	1.6	12

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91	Low-pressure dependency of the isotopic enrichment in ozone: Stratospheric implications. Journal of Geophysical Research, 2002, 107, ACH 4-1-ACH 4-10.	3.3	11
92	Response to Comments on â€œExperimental Test of Self-Shielding in Vacuum Ultraviolet Photodissociation of COâ€• Science, 2009, 324, 1516-1516.	12.6	11
93	Cosmogenic ³⁵S measurements in the Tibetan Plateau to quantify glacier snowmelt. Journal of Geophysical Research D: Atmospheres, 2014, 119, 4125-4135.	3.3	11
94	Simple Method for High-Sensitivity Determination of Cosmogenic ³⁵S in Snow and Water Samples Collected from Remote Regions. Analytical Chemistry, 2017, 89, 4116-4123.	6.5	11
95	Accurate Quantification of Radiosulfur in Chemically Complex Atmospheric Samples. Analytical Chemistry, 2018, 90, 2884-2890.	6.5	11
96	Measurements of 129I 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. Science of the Total Environment, 2019, 689, 1023-1029.	8.0	11
97	Carbon and oxygen isotopic fractionation in the products of low-temperature VUV photodissociation of carbon monoxide. Chemical Physics, 2018, 514, 78-86.	1.9	8
98	Detection of radioactive ³⁵S at Fukushima and other Japanese sites. Journal of Geophysical Research D: Atmospheres, 2013, 118, 1020-1027.	3.3	7
99	A Simple Elemental Sulfur Reduction Method for Isotopic Analysis and Pilot Experimental Tests of Symmetryâ€Dependent Sulfur Isotope Effects in Planetary Processes. Geochemistry, Geophysics, Geosystems, 2020, 21, e2020GC009051.	2.5	7
100	Quantification of Gas-to-Particle Conversion Rates of Sulfur in the Terrestrial Atmosphere Using High-Sensitivity Measurements of Cosmogenic ³⁵S. ACS Earth and Space Chemistry, 2017, 1, 324-333.	2.7	6
101	A Complete Isotope (Î´¹⁵N, Î´¹⁸O, Î”¹⁷O) Investigation of Atmospherically Deposited Nitrate in Glacialâ€Hydrologic Systems Across the Third Pole Region. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2019JD031878.	3.3	6
102	Mass-independent fractionation of oxygen isotopes during thermal decomposition of divalent metal carbonates: Crystallographic influence, potential mechanism and cosmochemical significance. Chemical Geology, 2021, 586, 120500.	3.3	6
103	Cosmogenic radiosulfur tracking of solar activity and the strong and long-lasting El NiÃ±o events. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2121550119.	7.1	5
104	Use of Isotope Effects To Understand the Present and Past of the Atmosphere and Climate and Track the Origin of Life. Angewandte Chemie, 2019, 131, 6898-6916.	2.0	4
105	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. Meteoritics and Planetary Science, 2019, 54, 231-248.	1.6	4
106	Isotopic Insights into Organic Composition Differences between Supermicron and Submicron Sea Spray Aerosol. Environmental Science & Technology, 2022, 56, 9947-9958.	10.0	4
107	Comment on â€œClimatic impact of the longâ€lasting Laki eruption: Inapplicability of massâ€independent sulfur isotope composition measurementsâ€• by Schmidt et al.. Journal of Geophysical Research D: Atmospheres, 2014, 119, 6629-6635.	3.3	3
108	Biologically Induced Changes in the Partitioning of Submicron Particulates Between Bulk Seawater and the Sea Surface Microlayer. Geophysical Research Letters, 2022, 49, e2021GL094587.	4.0	3

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109	Meteoritics: New isotopic evidence of early Solar System processes. Nature, 1983, 306, 18-19.	27.8	2
110	Reply to comment by D. Krankowsky et al. on â€œLow-pressure dependency of the isotopic enrichment in ozone: Stratospheric implicationsâ€•by S. K. Bhattacharya et al.. Journal of Geophysical Research, 2003, 108, .	3.3	1
111	Turekian reflections. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 16289-16290.	7.1	1
112	James R. Arnold: From the Manhattan Project to the moon and beyond. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 4339-4340.	7.1	0