

# Scott A Sandford

## List of Publications by Year in descending order

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92  
papers

9,223  
citations

41344

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45317

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93  
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93  
docs citations

93  
times ranked

4614  
citing authors

#	ARTICLE	IF	CITATIONS
1	Racemic amino acids from the ultraviolet photolysis of interstellar ice analogues. <i>Nature</i> , 2002, 416, 401-403.	27.8	702
2	Organics Captured from Comet 81P/Wild 2 by the Stardust Spacecraft. <i>Science</i> , 2006, 314, 1720-1724.	12.6	519
3	Organic Compounds Produced by Photolysis of Realistic Interstellar and Cometary Ice Analogs Containing Methanol. <i>Astrophysical Journal</i> , 1995, 454, 327.	4.5	429
4	OSIRIS-REx: Sample Return from Asteroid (101955) Bennu. <i>Space Science Reviews</i> , 2017, 212, 925-984.	8.1	426
5	Mid- and far-infrared spectroscopy of ices - Optical constants and integrated absorbances. <i>Astrophysical Journal, Supplement Series</i> , 1993, 86, 713.	7.7	413
6	UV Irradiation of Polycyclic Aromatic Hydrocarbons in Ices: Production of Alcohols, Quinones, and Ethers. <i>Science</i> , 1999, 283, 1135-1138.	12.6	352
7	Near-infrared absorption spectroscopy of interstellar hydrocarbon grains. <i>Astrophysical Journal</i> , 1994, 437, 683.	4.5	311
8	The interstellar C-H stretching band near 3.4 microns - Constraints on the composition of organic material in the diffuse interstellar medium. <i>Astrophysical Journal</i> , 1991, 371, 607.	4.5	263
9	Evidence for widespread hydrated minerals on asteroid (101955) Bennu. <i>Nature Astronomy</i> , 2019, 3, 332-340.	10.1	251
10	The First Cell Membranes. <i>Astrobiology</i> , 2002, 2, 371-381.	3.0	231
11	Laboratory studies of the infrared spectral properties of CO in astrophysical ices. <i>Astrophysical Journal</i> , 1988, 329, 498.	4.5	226
12	An Experimental Study of the Organic Molecules Produced in Cometary and Interstellar Ice Analogs by Thermal Formaldehyde Reactions. <i>Icarus</i> , 1993, 104, 118-137.	2.5	219
13	Self-assembling amphiphilic molecules: Synthesis in simulated interstellar/precometary ices. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2001, 98, 815-819.	7.1	208
14	Intrtstellar Polycyclic Aromatic Hydrocarbons and Carbon in Interplanetary Dust Particles and Meteorites. <i>Science</i> , 1987, 237, 56-59.	12.6	197
15	Laboratory infrared transmission spectra of individual interplanetary dust particles from 2.5 to 25 microns. <i>Astrophysical Journal</i> , 1985, 291, 838.	4.5	195
16	Mechanisms of Amino Acid Formation in Interstellar Ice Analogs. <i>Astrophysical Journal</i> , 2007, 660, 911-918.	4.5	192
17	The physical and infrared spectral properties of CO <sub>2</sub> in astrophysical ice analogs. <i>Astrophysical Journal</i> , 1990, 355, 357.	4.5	191
18	Establishing a molecular relationship between chondritic and cometary organic solids. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 19171-19176.	7.1	181

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19	Organic Synthesis via Irradiation and Warming of Ice Grains in the Solar Nebula. <i>Science</i> , 2012, 336, 452-454.	12.6	169
20	The OSIRIS-REx target asteroid (101955) Bennu: Constraints on its physical, geological, and dynamical nature from astronomical observations. <i>Meteoritics and Planetary Science</i> , 2015, 50, 834-849.	1.6	168
21	Evolution of Interstellar Ices. <i>Space Science Reviews</i> , 1999, 90, 219-232.	8.1	145
22	Quantitative organic and light-element analysis of comet 81P/Wild 2 particles using C <sub>1s</sub> , N <sub>1s</sub> , and O <sub>1s</sub> XANES. <i>Meteoritics and Planetary Science</i> , 2008, 43, 353-365.	1.6	137
23	Hydrogenated Polycyclic Aromatic Hydrocarbons and the 2940 and 2850 Wavenumber (3.40 and 3.51) Tj ETQq1 1,0,784314 rgBT /Ove	4.5	135
24	Prebiotic Astrochemistry and the Formation of Molecules of Astrobiological Interest in Interstellar Clouds and Protostellar Disks. <i>Chemical Reviews</i> , 2020, 120, 4616-4659.	47.7	128
25	Assessment of the interstellar processes leading to deuterium enrichment in meteoritic organics. <i>Meteoritics and Planetary Science</i> , 2001, 36, 1117-1133.	1.6	121
26	The inventory of interstellar materials available for the formation of the solar system. <i>Meteoritics and Planetary Science</i> , 1996, 31, 449-476.	1.6	99
27	Unraveling the 10 Micron Silicate Feature of Protostars: The Detection of Frozen Interstellar Ammonia. <i>Astrophysical Journal</i> , 1998, 501, L105-L109.	4.5	99
28	Formation of Uracil from the Ultraviolet Photo-Irradiation of Pyrimidine in Pure H <sub>2</sub> O Ices. <i>Astrobiology</i> , 2009, 9, 683-695.	3.0	99
29	Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Ultraviolet Photolysis in Cosmic Ice Analogs. <i>Astrophysical Journal</i> , 2002, 576, 1115-1120.	4.5	97
30	The volume- and surface-binding energies of ice systems containing CO, CO <sub>2</sub> and H <sub>2</sub> O. <i>Icarus</i> , 1990, 87, 188-192.	2.5	96
31	Combined micro-Raman, micro-infrared, and field emission scanning electron microscope analyses of comet 81P/Wild 2 particles collected by Stardust. <i>Meteoritics and Planetary Science</i> , 2008, 43, 367-397.	1.6	89
32	H <sub>2</sub> in interstellar and extragalactic ices - Infrared characteristics, ultraviolet production, and implications. <i>Astrophysical Journal</i> , 1993, 409, L65.	4.5	88
33	Nucleobases and Prebiotic Molecules in Organic Residues Produced from the Ultraviolet Photo-Irradiation of Pyrimidine in NH <sub>3</sub> and H <sub>2</sub> O+NH <sub>3</sub> Ices. <i>Astrobiology</i> , 2012, 12, 295-314.	3.0	86
34	The Galactic Distribution of Aliphatic Hydrocarbons in the Diffuse Interstellar Medium. <i>Astrophysical Journal</i> , 1995, 440, 697.	4.5	86
35	Ultraviolet irradiation of naphthalene in H <sub>2</sub> O ice: Implications for meteorites and biogenesis. <i>Meteoritics and Planetary Science</i> , 2001, 36, 351-358.	1.6	82
36	Formaldehyde and organic molecule production in astrophysical ices at cryogenic temperatures. <i>Science</i> , 1993, 259, 1143-1145.	12.6	80

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37	Isotopic and chemical variation of organic nanoglobules in primitive meteorites. <i>Meteoritics and Planetary Science</i> , 2013, 48, 904-928.	1.6	78
38	Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. <i>Astrophysical Journal</i> , 2003, 582, L25-L29.	4.5	73
39	Bright carbonate veins on asteroid (101955) Bennu: Implications for aqueous alteration history. <i>Science</i> , 2020, 370, .	12.6	71
40	THE INFRARED SPECTRA OF POLYCYCLIC AROMATIC HYDROCARBONS WITH EXCESS PERIPHERAL H ATOMS (H) Tj ETQq0 0 0 rgBT /Ove <i>Astrophysical Journal</i> , Supplement Series, 2013, 205, 8.	7.7	65
41	ICE CHEMISTRY ON OUTER SOLAR SYSTEM BODIES: ELECTRON RADIOLYSIS OF N <sub>2</sub> , CH <sub>4</sub> , AND CO-CONTAINING ICES. <i>Astrophysical Journal</i> , 2015, 812, 150.	4.5	59
42	Infrared Spectrum of Matrix-Isolated Hexamethylenetetramine in Ar and H <sub>2</sub> O at Cryogenic Temperatures. <i>The Journal of Physical Chemistry</i> , 1994, 98, 12206-12210.	2.9	57
43	THE PHOTOCHEMISTRY OF PYRIMIDINE IN REALISTIC ASTROPHYSICAL ICES AND THE PRODUCTION OF NUCLEOBASES. <i>Astrophysical Journal</i> , 2014, 793, 125.	4.5	56
44	Widespread carbon-bearing materials on near-Earth asteroid (101955) Bennu. <i>Science</i> , 2020, 370, .	12.6	56
45	Complex organics in laboratory simulations of interstellar/cometary ices. <i>Advances in Space Research</i> , 1997, 19, 991-998.	2.6	55
46	Life's Far-Flung Raw Materials. <i>Scientific American</i> , 1999, 281, 42-49.	1.0	55
47	Deuterium Enrichment of Polycyclic Aromatic Hydrocarbons by Photochemically Induced Exchange with Deuterium-rich Cosmic Ices. <i>Astrophysical Journal</i> , 2000, 538, 691-697.	4.5	55
48	Assessment and control of organic and other contaminants associated with the Stardust sample return from comet 81P/Wild 2. <i>Meteoritics and Planetary Science</i> , 2010, 45, 406-433.	1.6	55
49	The Mid-Infrared Laboratory Spectra of Naphthalene (C <sub>10</sub> H <sub>8</sub> ) in Solid H <sub>2</sub> O. <i>Astrophysical Journal</i> , 2004, 607, 346-360.	4.5	51
50	ICE CHEMISTRY ON OUTER SOLAR SYSTEM BODIES: CARBOXYLIC ACIDS, NITRILES, AND UREA DETECTED IN REFRACTORY RESIDUES PRODUCED FROM THE UV PHOTOLYSIS OF N <sub>2</sub> :CH <sub>4</sub> :CO-CONTAINING ICES. <i>Astrophysical Journal</i> , 2014, 788, 111.	4.5	48
51	Deoxyribose and deoxysugar derivatives from photoprocessed astrophysical ice analogues and comparison to meteorites. <i>Nature Communications</i> , 2018, 9, 5276.	12.8	48
52	The Mid-Infrared Absorption Spectra of Neutral Polycyclic Aromatic Hydrocarbons in Conditions Relevant to Dense Interstellar Clouds. <i>Astrophysical Journal</i> , Supplement Series, 2005, 161, 53-64.	7.7	47
53	Ultraviolet photolysis of anthracene in H <sub>2</sub> O interstellar ice analogs: Potential connection to meteoritic organics. <i>Meteoritics and Planetary Science</i> , 2007, 42, 2035-2041.	1.6	46
54	Thymine and Other Prebiotic Molecules Produced from the Ultraviolet Photo-Irradiation of Pyrimidine in Simple Astrophysical Ice Analogs. <i>Astrobiology</i> , 2013, 13, 948-962.	3.0	46

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55	H, C, N, and O Isotopic Substitution Studies of the 2165 Wavenumber (4.62 Micron) $\nu_{\text{CN}}$ Feature Produced by Ultraviolet Photolysis of Mixed Molecular Ices. <i>Astrophysical Journal</i> , 2000, 542, 894-897.	4.5	43
56	Near- and Mid-Infrared Laboratory Spectra of PAH Cations in Solid H <sub>2</sub> O. <i>Astrophysical Journal</i> , 2007, 664, 1264-1272.	4.5	42
57	TOF-SIMS analysis of cometary matter in Stardust aerogel tracks. <i>Meteoritics and Planetary Science</i> , 2008, 43, 233-246.	1.6	42
58	Complex aromatic hydrocarbons in Stardust samples collected from comet 81P/Wild 2. <i>Meteoritics and Planetary Science</i> , 2010, 45, 701-722.	1.6	41
59	Preliminary organic compound analysis of microparticles returned from Asteroid 25143 Itokawa by the Hayabusa mission. <i>Geochemical Journal</i> , 2012, 46, 61-72.	1.0	39
60	The Formation of Nucleobases from the Ultraviolet Photoirradiation of Purine in Simple Astrophysical Ice Analogues. <i>Astrobiology</i> , 2017, 17, 761-770.	3.0	33
61	Mechanism for the abiotic synthesis of uracil via UV-induced oxidation of pyrimidine in pure H <sub>2</sub> O ices under astrophysical conditions. <i>Journal of Chemical Physics</i> , 2010, 133, 104303.	3.0	30
62	<i>N</i> - AND <i>O</i> -HETEROCYCLES PRODUCED FROM THE IRRADIATION OF BENZENE AND NAPHTHALENE IN H <sub>2</sub> O/NH <sub>3</sub> -CONTAINING ICES. <i>Astrophysical Journal</i> , 2015, 800, 116.	4.5	29
63	TOF-SIMS analysis of cometary particles extracted from Stardust aerogel. <i>Meteoritics and Planetary Science</i> , 2008, 43, 285-298.	1.6	25
64	An evolutionary connection between interstellar ices and IDPs? Clues from mass spectroscopy measurements of laboratory simulations. <i>Advances in Space Research</i> , 2004, 33, 67-71.	2.6	24
65	Interstellar processes leading to molecular deuterium enrichment and their detection. <i>Planetary and Space Science</i> , 2002, 50, 1145-1154.	1.7	23
66	Photosynthesis and Photo-Stability of Nucleic Acids in Prebiotic Extraterrestrial Environments. <i>Topics in Current Chemistry</i> , 2014, 356, 123-164.	4.0	23
67	Mechanisms for the formation of thymine under astrophysical conditions and implications for the origin of life. <i>Journal of Chemical Physics</i> , 2016, 144, 144308.	3.0	21
68	Terrestrial Analysis of the Organic Component of Comet Dust. <i>Annual Review of Analytical Chemistry</i> , 2008, 1, 549-578.	5.4	20
69	TOF-SIMS analysis of crater residues from Wild 2 cometary particles on Stardust aluminum foil. <i>Meteoritics and Planetary Science</i> , 2008, 43, 161-185.	1.6	20
70	Infrared spectroscopy of Wild 2 particle hypervelocity tracks in Stardust aerogel: Evidence for the presence of volatile organics in cometary dust. <i>Meteoritics and Planetary Science</i> , 2009, 44, 471-484.	1.6	20
71	The Photochemistry of Purine in Ice Analogs Relevant to Dense Interstellar Clouds. <i>Astrophysical Journal</i> , 2018, 864, 44.	4.5	20
72	The spectrum of NGC 7027 from 3080 to 2630 wavenumbers (3.25-3.80 microns) - Detection of new atomic and molecular hydrogen lines and new constraints on the chemical sidegroups on polycyclic aromatic hydrocarbons. <i>Astrophysical Journal</i> , 1991, 376, 599.	4.5	16

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73	Discovery of non-random spatial distribution of impacts in the Stardust cometary collector. <i>Meteoritics and Planetary Science</i> , 2008, 43, 415-429.	1.6	15
74	Organic compound alteration during hypervelocity collection of carbonaceous materials in aerogel. <i>Meteoritics and Planetary Science</i> , 2009, 44, 15-24.	1.6	15
75	Mid-infrared study of stones from the Sutter's Mill meteorite. <i>Meteoritics and Planetary Science</i> , 2014, 49, 2017-2026.	1.6	15
76	The Production and Potential Detection of Hexamethylenetetramine-Methanol in Space. <i>Astrobiology</i> , 2020, 20, 601-616.	3.0	15
77	A Predicted Dearth of Majority Hypervolatile Ices in Oort Cloud Comets. <i>Planetary Science Journal</i> , 2022, 3, 112.	3.6	15
78	Stardust Interstellar Preliminary Examination V: XRF analyses of interstellar dust candidates at ESRF ID 13. <i>Meteoritics and Planetary Science</i> , 2014, 49, 1594-1611.	1.6	12
79	The mid-infrared transmission spectra of multiple stones from the Almahata Sitta meteorite. <i>Meteoritics and Planetary Science</i> , 2010, 45, 1821-1835.	1.6	11
80	Composition of organics on asteroid (101955) Bennu. <i>Astronomy and Astrophysics</i> , 2021, 653, L1.	5.1	10
81	The Detection of 6.9 $\mu$ m Emission Features in the Infrared Spectra of IRAS 04296+3429, IRAS 05341+0852, and IRAS 22272+5435: Evidence for the Presence of H <sub>n</sub> -PAHs in Post-AGB Stars. <i>Astrophysical Journal</i> , 2017, 850, 165.	4.5	9
82	Laboratory spectra of CO <sub>2</sub> vibrational modes in planetary ice analogs. <i>Icarus</i> , 2012, 221, 1032-1042.	2.5	8
83	Very low temperature formaldehyde reactions and the build-up of organic molecules in comets and interstellar ices. <i>Advances in Space Research</i> , 1995, 15, 401-406.	2.6	7
84	The Power of Sample Return Missions - Stardust and Hayabusa. <i>Proceedings of the International Astronomical Union</i> , 2011, 7, 275-287.	0.0	7
85	Outgassing from the OSIRIS-REx sample return capsule: characterization and mitigation. <i>Acta Astronautica</i> , 2020, 166, 391-399.	3.2	7
86	Visible-near infrared spectral indices for mapping mineralogy and chemistry with OSIRIS-REx. <i>Meteoritics and Planetary Science</i> , 2020, 55, 744-765.	1.6	7
87	The Calculated Infrared Spectra of Functionalized Hexamethylenetetramine (HMT) Molecules. <i>Astrophysical Journal</i> , 2019, 884, 64.	4.5	6
88	Organics in the samples returned from comet 81P/Wild 2 by the Stardust Spacecraft. <i>Proceedings of the International Astronomical Union</i> , 2008, 4, 299-308.	0.0	4
89	Visualization and identification of single meteoritic organic molecules by atomic force microscopy. <i>Meteoritics and Planetary Science</i> , 2022, 57, 644-656.	1.6	4
90	Formation of Organic Molecules by Formaldehyde Reactions in Astrophysical Ices at Very Low Temperatures. <i>Symposium - International Astronomical Union</i> , 1992, 150, 29-30.	0.1	0

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91	Photochemistry of interstellar/circumstellar ices as a contributor to the complex organics in meteorites. Proceedings of the International Astronomical Union, 2008, 4, 443-444.	0.0	0
92	Formation of complex organic molecules in astrophysical environments: Sugars and derivatives. Proceedings of the International Astronomical Union, 2019, 15, 123-126.	0.0	0