Michael D Smith

List of Publications by Year
in descending order

144 papers	15,561 citations	17429 63 h-index	16636 123 g-index
149 all docs	149 docs citations	149 times ranked	5333 citing authors

#	Article	IF	Citations
1	Explaining NOMAD D/H Observations by Cloudâ€Induced Fractionation of Water Vapor on Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	11
2	The Emirates Mars Mission. Space Science Reviews, 2022, 218, 4.	3.7	29
3	Radiation and Dust Sensor for Mars Environmental Dynamic Analyzer Onboard M2020 Rover. Sensors, 2022, 22, 2907.	2.1	18
4	Marsâ€™ emitted energy and seasonal energy imbalance. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2121084119.	3.3	2
5	Planetâ€Wide Ozone Destruction in the Middle Atmosphere on Mars During Global Dust Storm. Geophysical Research Letters, 2022, 49, .	1.5	7
6	The Deuterium Isotopic Ratio of Water Released From the Martian Caps as Measured With TGO/NOMAD. Geophysical Research Letters, 2022, 49, .	1.5	15
7	The annual cycle of water vapor above gale crater as retrieved by CRISM and compared to ChemCam passive sky spectroscopy. Icarus, 2022, 385, 115136.	1.1	1
8	Comprehensive investigation of Mars methane and organics with ExoMars/NOMAD. Icarus, 2021, 357, 114266.	1.1	27
9	Water heavily fractionated as it ascends on Mars as revealed by ExoMars/NOMAD. Science Advances, 2021, 7, .	4.7	31
10	The Mars Environmental Dynamics Analyzer, MEDA. A Suite of Environmental Sensors for the Mars 2020 Mission. Space Science Reviews, 2021, 217, 48.	3.7	57
11	Probing the Atmospheric Cl Isotopic Ratio on Mars: Implications for Planetary Evolution and Atmospheric Chemistry. Geophysical Research Letters, 2021, 48, e2021GL092650.	1.5	7
12	Temperature fluctuations and boundary layer turbulence as seen by Mars Exploration Rovers Miniature Thermal Emission Spectrometer. Icarus, 2021, 360, 114350.	1.1	8
13	Gravity Wave Observations by the Mars Science Laboratory REMS Pressure Sensor and Comparison With Mesoscale Atmospheric Modeling With MarsWRF. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006907.	1.5	11
14	The climatology of carbon monoxide on Mars as observed by NOMAD nadir-geometry observations. Icarus, 2021, 362, 114404.	1.1	11
15	The Emirates Mars Mission (EMM) Emirates Mars InfraRed Spectrometer (EMIRS) Instrument. Space Science Reviews, 2021, 217, 77.	3.7	21
16	Emirates Mars Mission Characterization of Mars Atmosphere Dynamics and Processes. Space Science Reviews, 2021, 217, .	3.7	23
17	ExoMars TGO/NOMADâ€UVIS Vertical Profiles of Ozone: 2. The Highâ€Altitude Layers of Atmospheric Ozone. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006834.	1.5	14
18	A Global and Seasonal Perspective of Martian Water Vapor From ExoMars/NOMAD. Journal of Geophysical Research E: Planets, 2021, 126, .	1.5	8

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19	MOSAIC: A Satellite Constellation to Enable Groundbreaking Mars Climate System Science and Prepare for Human Exploration. Planetary Science Journal, 2021, 2, 211.	1.5	6
20	ExoMars TGO/NOMADâ€UVIS Vertical Profiles of Ozone: 1. Seasonal Variation and Comparison to Water. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006837.	1.5	18
21	First Detection and Thermal Characterization of Terminator CO₂Ice Clouds With ExoMars/NOMAD. Geophysical Research Letters, 2021, 48, .	1.5	12
22	Explanation for the Increase in Highâ€Altitude Water on Mars Observed by NOMAD During the 2018 Global Dust Storm. Geophysical Research Letters, 2020, 47, e2019GL084354.	1.5	62
23	Strong Variability of Martian Water Ice Clouds During Dust Storms Revealed From ExoMars Trace Gas Orbiter/NOMAD. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006250.	1.5	39
24	MAVEN ROSE Observations of the Response of the Martian Ionosphere to Dust Storms. Journal of Geophysical Research: Space Physics, 2020, 125, e2019JA027083.	0.8	22
25	Design of a direct-detection wind and aerosol lidar for mars orbit. CEAS Space Journal, 2020, 12, 149-162.	1.1	12
26	Detections of Water Vapor Increase Over the North Polar Troughs on Mars as Observed by CRISM. Geophysical Research Letters, 2020, 47, e2019GL086195.	1.5	3
27	Global seasonal variations of the near-surface relative humidity levels on present-day Mars. Icarus, 2019, 333, 481-495.	1.1	11
28	Effects of the MY34/2018 Global Dust Storm as Measured by MSL REMS in Gale Crater. Journal of Geophysical Research E: Planets, 2019, 124, 1899-1912.	1.5	40
29	THEMIS Observations of the 2018 Mars Global Dust Storm. Journal of Geophysical Research E: Planets, 2019, 124, 2929-2944.	1.5	46
30	Large Dust Aerosol Sizes Seen During the 2018 Martian Global Dust Event by the Curiosity Rover. Geophysical Research Letters, 2019, 46, 9448-9456.	1.5	58
31	Understanding the water cycle above the north polar cap on Mars using MRO CRISM retrievals of water vapor. Icarus, 2019, 321, 722-735.	1.1	13
32	Local time variation of water ice clouds on Mars as observed by THEMIS. Icarus, 2019, 333, 273-282.	1.1	14
33	IRTF/CSHELL mapping of atmospheric HDO, H2O and D/H on Mars during northern summer. Icarus, 2019, 330, 204-216.	1.1	8
34	Global analysis and forecasts of carbon monoxide on Mars. Icarus, 2019, 328, 232-245.	1.1	19
35	Seasonal Variation in Martian Water Ice Cloud Particle Size. Journal of Geophysical Research E: Planets, 2019, 124, 636-643.	1.5	21
36	Martian dust storm impact on atmospheric H2O and D/H observed by ExoMars Trace Gas Orbiter. Nature, 2019, 568, 521-525.	13.7	107

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37	The distribution, composition, and particle properties of Mars mesospheric aerosols: An analysis of CRISM visible/near-IR limb spectra with context from near-coincident MCS and MARCI observations. Icarus, 2019, 328, 246-273.	1.1	40
38	Water Vapor Vertical Profiles on Mars in Dust Storms Observed by TGO/NOMAD. Journal of Geophysical Research E: Planets, 2019, 124, 3482-3497.	1.5	88
39	Methane on Mars: New insights into the sensitivity of CH4 with the NOMAD/ExoMars spectrometer through its first in-flight calibration. Icarus, 2019, 321, 671-690.	1.1	32
40	Mars Science Laboratory Observations of the 2018/Mars Year 34 Global Dust Storm. Geophysical Research Letters, 2019, 46, 71-79.	1.5	138
41	Retrieval of water vapor column abundance and aerosol properties from ChemCam passive sky spectroscopy. Icarus, 2018, 307, 294-326.	1.1	39
42	Saltation under Martian gravity and its influence on the global dust distribution. Icarus, 2018, 306, 25-31.	1.1	33
43	The Thermophysical Properties of the Bagnold Dunes, Mars: Groundâ€truthing Orbital Data. Journal of Geophysical Research E: Planets, 2018, 123, 1307-1326.	1.5	34
44	The climatology of carbon monoxide and water vapor on Mars as observed by CRISM and modeled by the GEM-Mars general circulation model. Icarus, 2018, 301, 117-131.	1.1	74
45	NOMAD, an Integrated Suite of Three Spectrometers for the ExoMars Trace Gas Mission: Technical Description, Science Objectives and Expected Performance. Space Science Reviews, 2018, 214, 1.	3.7	95
46	Planetary Spectrum Generator: An accurate online radiative transfer suite for atmospheres, comets, small bodies and exoplanets. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 217, 86-104.	1.1	167
47	Background levels of methane in Marsâ€™ atmosphere show strong seasonal variations. Science, 2018, 360, 1093-1096.	6.0	224
48	Thermophysical properties along Curiosity's traverse in Gale crater, Mars, derived from the REMS ground temperature sensor. Icarus, 2017, 284, 372-386.	1.1	74
49	Vertical profiles of Mars 1.27ÂÂµm O 2 dayglow from MRO CRISM limb spectra: Seasonal/global behaviors, comparisons to LMDGCM simulations, and a global definition for Mars water vapor profiles. Icarus, 2017, 293, 132-156.	1.1	58
50	The Modern Near-Surface Martian Climate: A Review of In-situ Meteorological Data from Viking to Curiosity. Space Science Reviews, 2017, 212, 295-338.	3.7	153
51	Seasonal Slumps in Juventae Chasma, Mars. Journal of Geophysical Research E: Planets, 2017, 122, 2193-2214.	1.5	14
52	History of Mars Atmosphere Observations. , 2017, , 20-41.		4
53	Thermal Structure and Composition. , 2017, , 42-75.		19
54	Mars Clouds. , 2017, , 76-105.		24

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55	The Martian Planetary Boundary Layer. , 2017, , 172-202.		14
56	Mesoscale Meteorology. , 2017, , 203-228.		5
57	The Global Circulation. , 2017, , 229-294.		31
58	The Mars Dust Cycle. , 2017, , 295-337.		70
59	The Water Cycle. , 2017, , 338-373.		24
60	Atmospheric Photochemistry. , 2017, , 405-432.		18
61	Upper Neutral Atmosphere and Ionosphere. , 2017, , 433-463.		33
62	The Vertical Dust Profile Over Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2017, 122, 2779-2792.	1.5	22
63	Unique Spectroscopy and Imaging of Mars with the James Webb Space Telescope. Publications of the Astronomical Society of the Pacific, 2016, 128, 018004.	1.0	5
64	Interannual similarity in the Martian atmosphere during the dust storm season. Geophysical Research Letters, 2016, 43, 6111-6118.	1.5	121
65	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.	1.5	34
66	Aerosol optical depth as observed by the Mars Science Laboratory REMS UV photodiodes. Icarus, 2016, 280, 234-248.	1.1	48
67	The solsticial pause on Mars: 1. A planetary wave reanalysis. Icarus, 2016, 264, 456-464.	1.1	74
68	Daily global mapping of Mars ozone column abundances with MARCI UV band imaging. Icarus, 2016, 266, 112-133.	1.1	50
69	A solar escalator on Mars: Selfâ€lifting of dust layers by radiative heating. Geophysical Research Letters, 2015, 42, 7319-7326.	1.5	38
70	Mars Reconnaissance Orbiter and Opportunity observations of the Burns formation: Crater hopping at Meridiani Planum. Journal of Geophysical Research E: Planets, 2015, 120, 429-451.	1.5	30
71	Strong water isotopic anomalies in the martian atmosphere: Probing current and ancient reservoirs. Science, 2015, 348, 218-221.	6.0	245
72	Observational evidence of a suppressed planetary boundary layer in northern Gale Crater, Mars as seen by the Navcam instrument onboard the Mars Science Laboratory rover. Icarus, 2015, 249, 129-142.	1.1	66

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73	Atmospheric movies acquired at the Mars Science Laboratory landing site: Cloud morphology, frequency and significance to the Gale Crater water cycle and Phoenix mission results. Advances in Space Research, 2015, 55, 2217-2238.	1.2	28
74	Science objectives and performances of NOMAD, a spectrometer suite for the ExoMars TGO mission. Planetary and Space Science, 2015, 119, 233-249.	0.9	77
75	Marsâ€™ water vapor mapping by the SPICAM IR spectrometer: Five martian years of observations. Icarus, 2015, 251, 50-64.	1.1	90
76	Dust aerosol, clouds, and the atmospheric optical depth record over 5 Mars years of the Mars Exploration Rover mission. Icarus, 2015, 251, 96-111.	1.1	158
77	The vertical distribution of Martian aerosol particle size. Journal of Geophysical Research E: Planets, 2014, 119, 2694-2708.	1.5	42
78	The Mars Analysis Correction Data Assimilation (<scp>MACDA</scp>) Dataset V1.0. Geoscience Data Journal, 2014, 1, 129-139.	1.8	61
79	Marsâ€™ Surface Radiation Environment Measured with the Mars Science Laboratoryâ€™s Curiosity Rover. Science, 2014, 343, 1244797.	6.0	475
80	The seasonal cycle of water vapour on Mars from assimilation of Thermal Emission Spectrometer data. Icarus, 2014, 237, 97-115.	1.1	47
81	Mars photoelectron energy and pitch angle dependence on intense lower atmospheric dust storms. Journal of Geophysical Research E: Planets, 2014, 119, 1689-1706.	1.5	13
82	Thermal tides during the 2001 Martian globalâ€scale dust storm. Journal of Geophysical Research E: Planets, 2014, 119, 506-519.	1.5	42
83	Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow. Science, 2013, 341, 1239505.	6.0	280
84	Abundance and Isotopic Composition of Gases in the Martian Atmosphere from the Curiosity Rover. Science, 2013, 341, 263-266.	6.0	327
85	First detection of Mars atmospheric hydroxyl: CRISM Near-IR measurement versus LMD GCM simulation of OH Meinel band emission in the Mars polar winter atmosphere. Icarus, 2013, 226, 272-281.	1.1	54
86	Retrievals of martian atmospheric opacities from MGS TES nighttime data. Icarus, 2013, 226, 708-722.	1.1	41
87	Low Upper Limit to Methane Abundance on Mars. Science, 2013, 342, 355-357.	6.0	103
88	Vertical distribution of dust and water ice aerosols from CRISM limbâ€geometry observations. Journal of Geophysical Research E: Planets, 2013, 118, 321-334.	1.5	74
89	High spatial and temporal resolution sampling of Martian gas abundances from CRISM spectra. Journal of Geophysical Research E: Planets, 2013, 118, 89-104.	1.5	36
90	Extensive MRO CRISM observations of 1.27 Î¼m O₂ airglow in Mars polar night and their comparison to MRO MCS temperature profiles and LMD GCM simulations. Journal of Geophysical Research, 2012, 117, .	3.3	51

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91	Time-history influence of global dust storms on the upper atmosphere at Mars. Geophysical Research Letters, 2012, 39, n/a-n/a.	1.5	16
92	MGS TES observations of the water vapor above the seasonal and perennial ice caps during northern spring and summer. Icarus, 2010, 210, 58-71.	1.1	32
93	Extension of atmospheric dust loading to high altitudes during the 2001 Mars dust storm: MGS TES limb observations. Icarus, 2010, 207, 98-109.	1.1	87
94	Phoenix and MRO coordinated atmospheric measurements. Journal of Geophysical Research, 2010, 115, .	3.3	40
95	An improvement to the volcano-scan algorithm for atmospheric correction of CRISM and OMEGA spectral data. Planetary and Space Science, 2009, 57, 809-815.	0.9	166
96	Thermal structure of the atmospheric boundary layer on Mars based on Miniâ€TES observations. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 1776-1787.	1.0	14
97	THEMIS observations of Mars aerosol optical depth from 2002â€“2008. Icarus, 2009, 202, 444-452.	1.1	178
98	Water vapor variability in the north polar region of Mars from Viking MAWD and MGS TES datasets. Icarus, 2009, 204, 87-102.	1.1	17
99	Compact Reconnaissance Imaging Spectrometer for Mars investigation and data set from the Mars Reconnaissance Orbiter's primary science phase. Journal of Geophysical Research, 2009, 114, .	3.3	178
100	Simultaneous observations of the Martian atmosphere by Planetary Fourier Spectrometer on Mars Express and Miniature Thermal Emission Spectrometer on Mars Exploration Rover. Journal of Geophysical Research, 2009, 114, .	3.3	7
101	Strong Release of Methane on Mars in Northern Summer 2003. Science, 2009, 323, 1041-1045.	6.0	516
102	Wavelength dependence of dust aerosol single scattering albedo as observed by the Compact Reconnaissance Imaging Spectrometer. Journal of Geophysical Research, 2009, 114, .	3.3	196
103	Compact Reconnaissance Imaging Spectrometer observations of water vapor and carbon monoxide. Journal of Geophysical Research, 2009, 114, .	3.3	137
104	MRO/CRISM Retrieval of Surface Lambert Albedos for Multispectral Mapping of Mars With DISORT-Based Radiative Transfer Modeling: Phase 1â€”Using Historical Climatology for Temperatures, Aerosol Optical Depths, and Atmospheric Pressures. IEEE Transactions on Geoscience and Remote Sensing, 2008, 46, 4020-4040.	2.7	41
105	Influence of water ice clouds on Martian tropical atmospheric temperatures. Geophysical Research Letters, 2008, 35, .	1.5	84
106	Expected atmospheric environment for the Phoenix landing season and location. Journal of Geophysical Research, 2008, 113, .	3.3	25
107	Spacecraft Observations of the Martian Atmosphere. Annual Review of Earth and Planetary Sciences, 2008, 36, 191-219.	4.6	162
108	Diurnal variation and radiative influence of Martian water ice clouds. Geophysical Research Letters, 2007, 34, .	1.5	82

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109	CRISM multispectral summary products: Parameterizing mineral diversity on Mars from reflectance. Journal of Geophysical Research, 2007, 112, .	3.3	304
110	Compact Reconnaissance Imaging Spectrometer for Mars (CRISM) on Mars Reconnaissance Orbiter (MRO). Journal of Geophysical Research, 2007, 112, .	3.3	796
111	Mars equatorial mesospheric clouds: Global occurrence and physical properties from Mars Global Surveyor Thermal Emission Spectrometer and Mars Orbiter Camera limb observations. Journal of Geophysical Research, 2007, 112, .	3.3	66
112	Assimilation of thermal emission spectrometer atmospheric data during the Mars Global Surveyor aerobraking period. Icarus, 2007, 192, 327-347.	1.1	91
113	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
114	Overview of the Spirit Mars Exploration Rover Mission to Gusev Crater: Landing site to Backstay Rock in the Columbia Hills. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	238
115	One Martian year of atmospheric observations using MER Mini-TES. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	147
116	Constraints on dust aerosols from the Mars Exploration Rovers using MGS overflights and Mini-TES. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	159
117	Atmospheric Imaging Results from the Mars Exploration Rovers: Spirit and Opportunity. Science, 2004, 306, 1753-1756.	6.0	219
118	Initial Results from the Mini-TES Experiment in Gusev Crater from the Spirit Rover. Science, 2004, 305, 837-842.	6.0	168
119	Mineralogy at Meridiani Planum from the Mini-TES Experiment on the Opportunity Rover. Science, 2004, 306, 1733-1739.	6.0	370
120	The Spirit Rover's Athena Science Investigation at Gusev Crater, Mars. Science, 2004, 305, 794-799.	6.0	404
121	The Opportunity Rover's Athena Science Investigation at Meridiani Planum, Mars. Science, 2004, 306, 1698-1703.	6.0	507
122	First Atmospheric Science Results from the Mars Exploration Rovers Mini-TES. Science, 2004, 306, 1750-1753.	6.0	102
123	Interannual variability in TES atmospheric observations of Mars during 1999â€“2003. Icarus, 2004, 167, 148-165.	1.1	669
124	Atmospheric correction and surface spectral unit mapping using Thermal Emission Imaging System data. Journal of Geophysical Research, 2004, 109, .	3.3	91
125	Comparison of atmospheric temperatures obtained through infrared sounding and radio occultation by Mars Global Surveyor. Journal of Geophysical Research, 2004, 109, .	3.3	39
126	Morphology and Composition of the Surface of Mars: Mars Odyssey THEMIS Results. Science, 2003, 300, 2056-2061.	6.0	368

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127	Multiple emission angle surfaceâ€“atmosphere separations of thermal emission spectrometer data. Icarus, 2003, 161, 47-65.	1.1	110
128	Stationary planetary waves in the atmosphere of Mars during southern winter. Journal of Geophysical Research, 2003, 108, .	3.3	44
129	Thermal Emission Imaging System (THEMIS) infrared observations of atmospheric dust and water ice cloud optical depth. Journal of Geophysical Research, 2003, 108, .	3.3	55
130	The annual cycle of water vapor on Mars as observed by the Thermal Emission Spectrometer. Journal of Geophysical Research, 2002, 107, 25-1-25-19.	3.3	272
131	Traveling waves in the Northern Hemisphere of Mars. Geophysical Research Letters, 2002, 29, 29-1-29-4.	1.5	72
132	Thermal Emission Spectrometer Observations of Martian Planet-Encircling Dust Storm 2001A. Icarus, 2002, 157, 259-263.	1.1	139
133	Observations of Martian ice clouds by the Mars Global Surveyor Thermal Emission Spectrometer: The first Martian year. Journal of Geophysical Research, 2001, 106, 12325-12338.	3.3	114
134	Thermal Emission Spectrometer results: Mars atmospheric thermal structure and aerosol distribution. Journal of Geophysical Research, 2001, 106, 23929-23945.	3.3	225
135	Mars Global Surveyor Thermal Emission Spectrometer experiment: Investigation description and surface science results. Journal of Geophysical Research, 2001, 106, 23823-23871.	3.3	903
136	One Martian year of atmospheric observations by the thermal emission spectrometer. Geophysical Research Letters, 2001, 28, 4263-4266.	1.5	74
137	An intercomparison of ground-based millimeter, MGS TES, and Viking atmospheric temperature measurements: Seasonal and interannual variability of temperatures and dust loading in the global Mars atmosphere. Journal of Geophysical Research, 2000, 105, 9553-9571.	3.3	340
138	Detection of crystalline hematite mineralization on Mars by the Thermal Emission Spectrometer: Evidence for near-surface water. Journal of Geophysical Research, 2000, 105, 9623-9642.	3.3	427
139	Spectral data set factor analysis and end-member recovery: Application to analysis of Martian atmospheric particulates. Journal of Geophysical Research, 2000, 105, 9573-9587.	3.3	132
140	Mars Global Surveyor Thermal Emission Spectrometer (TES) observations: Atmospheric temperatures during aerobraking and science phasing. Journal of Geophysical Research, 2000, 105, 9509-9519.	3.3	198
141	Mars Global Surveyor Thermal Emission Spectrometer (TES) observations of dust opacity during aerobraking and science phasing. Journal of Geophysical Research, 2000, 105, 9539-9552.	3.3	144
142	Separation of atmospheric and surface spectral features in Mars Global Surveyor Thermal Emission Spectrometer (TES) spectra. Journal of Geophysical Research, 2000, 105, 9589-9607.	3.3	148
143	The Structure of the Upper Atmosphere of Mars: In Situ Accelerometer Measurements from Mars Global Surveyor. Science, 1998, 279, 1672-1676.	6.0	234
144	Retrieval of Atmospheric Temperatures in the Martian Planetary Boundary Layer Using Upward-Looking Infrared Spectra. Icarus, 1996, 124, 586-597.	1.1	12