Frank Daerden

List of Publications by Year
in descending order

71 papers	2,081 citations	218677 26 h-index	254184 43 g-index
91 all docs	91 docs citations	91 times ranked	1398 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, .	3.6	11
2	Removal of straylight from ExoMars NOMAD-UVIS observations. Planetary and Space Science, 2022, 218, 105432.	1.7	3
3	Calibration of NOMAD on ExoMars Trace Gas Orbiter: Part 3 - LNO validation and instrument stability. Planetary and Space Science, 2022, 218, 105399.	1.7	4
4	Observation Capability of a Ground-Based Terahertz Radiometer for Vertical Profiles of Oxygen and Water Abundances in Martian Atmosphere. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-11.	6.3	1
5	Calibration of NOMAD on ESA's ExoMars Trace Gas Orbiter: Part 1 â€“ The Solar Occultation channel. Planetary and Space Science, 2022, 218, 105411.	1.7	8
6	Vertical Aerosol Distribution and Mesospheric Clouds From ExoMars UVIS. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	6
7	Martian CO₂ Ice Observation at High Spectral Resolution With ExoMars/TGO NOMAD. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	5
8	Calibration of the NOMAD-UVIS data. Planetary and Space Science, 2022, 218, 105504.	1.7	5
9	Variations in Vertical CO/CO₂ Profiles in the Martian Mesosphere and Lower Thermosphere Measured by the ExoMars TGO/NOMAD: Implications of Variations in Eddy Diffusion Coefficient. Geophysical Research Letters, 2022, 49, .	4.0	7
10	Density and Temperature of the Upper Mesosphere and Lower Thermosphere of Mars Retrieved From the OI 557.7Ânm Dayglow Measured by TGO/NOMAD. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	6
11	The Mars Oxygen Visible Dayglow: A Martian Year of NOMAD/UVIS Observations. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	2
12	Planetâ€Wide Ozone Destruction in the Middle Atmosphere on Mars During Global Dust Storm. Geophysical Research Letters, 2022, 49, .	4.0	7
13	The Deuterium Isotopic Ratio of Water Released From the Martian Caps as Measured With TGO/NOMAD. Geophysical Research Letters, 2022, 49, .	4.0	15
14	Comprehensive investigation of Mars methane and organics with ExoMars/NOMAD. Icarus, 2021, 357, 114266.	2.5	27
15	Machine learning for automatic identification of new minor species. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 259, 107361.	2.3	2
16	Impact of gradients at the martian terminator on the retrieval of ozone from SPICAM/MEx. Icarus, 2021, 353, 113598.	2.5	8
17	Transient HCl in the atmosphere of Mars. Science Advances, 2021, 7, .	10.3	37
18	Water heavily fractionated as it ascends on Mars as revealed by ExoMars/NOMAD. Science Advances, 2021, 7, .	10.3	31

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19	Seasonal and Spatial Variability of Carbon Monoxide (CO) in the Martian Atmosphere From PFS/MEX Observations. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006480.	3.6	6
20	Multi-model Meteorological and Aeolian Predictions for Mars 2020 and the Jezero Crater Region. Space Science Reviews, 2021, 217, 20.	8.1	35
21	First Observation of the Oxygen 630Ânm Emission in the Martian Dayglow. Geophysical Research Letters, 2021, 48, e2020GL092334.	4.0	8
22	Exploiting night-time averaged spectra from PFS/MEX shortwave channel. Part 1: Temperature retrieval from the CO2 Î½3 band. Planetary and Space Science, 2021, 198, 105186.	1.7	0
23	Probing the Atmospheric Cl Isotopic Ratio on Mars: Implications for Planetary Evolution and Atmospheric Chemistry. Geophysical Research Letters, 2021, 48, e2021GL092650.	4.0	7
24	Exploiting night-time averaged spectra from PFS/MEX shortwave channel. Part 2: Near-surface CO retrievals. Planetary and Space Science, 2021, 199, 105188.	1.7	0
25	Annual Appearance of Hydrogen Chloride on Mars and a Striking Similarity With the Water Vapor Vertical Distribution Observed by TGO/NOMAD. Geophysical Research Letters, 2021, 48, e2021GL092506.	4.0	15
26	The climatology of carbon monoxide on Mars as observed by NOMAD nadir-geometry observations. Icarus, 2021, 362, 114404.	2.5	11
27	Martian water loss to space enhanced by regional dust storms. Nature Astronomy, 2021, 5, 1036-1042.	10.1	40
28	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.	3.6	14
29	A Global and Seasonal Perspective of Martian Water Vapor From ExoMars/NOMAD. Journal of Geophysical Research E: Planets, 2021, 126, .	3.6	8
30	ExoMars TGO/NOMADâ€UVIS Vertical Profiles of Ozone: 1. Seasonal Variation and Comparison to Water. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006837.	3.6	18
31	First Detection and Thermal Characterization of Terminator CO₂Ice Clouds With ExoMars/NOMAD. Geophysical Research Letters, 2021, 48, .	4.0	12
32	Calibration of NOMAD on ESA's ExoMars Trace Gas Orbiter: Part 2 â€“ The Limb, Nadir and Occultation (LNO) channel. Planetary and Space Science, 2021, , 105410.	1.7	3
33	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.	4.0	62
34	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.	3.6	39
35	Detection of green line emission in the dayside atmosphere of Mars from NOMAD-TGO observations. Nature Astronomy, 2020, 4, 1049-1052.	10.1	13
36	Retrieval and characterization of carbon monoxide (CO) vertical profiles in the Martian atmosphere from observations of PFS/MEX. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 238, 106498.	2.3	6

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37	Mars atmospheric chemistry simulations with the GEM-Mars general circulation model. Icarus, 2019, 326, 197-224.	2.5	52
38	No detection of methane on Mars from early ExoMars Trace Gas Orbiter observations. Nature, 2019, 568, 517-520.	27.8	111
39	Martian dust storm impact on atmospheric H2O and D/H observed by ExoMars Trace Gas Orbiter. Nature, 2019, 568, 521-525.	27.8	107
40	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.	2.5	40
41	Independent confirmation of a methane spike on Mars and a source region east of Gale Crater. Nature Geoscience, 2019, 12, 326-332.	12.9	63
42	Ground-based infrared mapping of H₂O₂ on Mars near opposition. Astronomy and Astrophysics, 2019, 627, A60.	5.1	8
43	Water Vapor Vertical Profiles on Mars in Dust Storms Observed by TGO/NOMAD. Journal of Geophysical Research E: Planets, 2019, 124, 3482-3497.	3.6	88
44	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.	2.5	32
45	Saltation under Martian gravity and its influence on the global dust distribution. Icarus, 2018, 306, 25-31.	2.5	33
46	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.	2.5	74
47	The GEM-Mars general circulation model for Mars: Description and evaluation. Icarus, 2018, 300, 458-476.	2.5	46
48	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.	8.1	95
49	Two test-cases for synergistic detections in the Martian atmosphere: Carbon monoxide and methane. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 189, 86-104.	2.3	7
50	Mars Clouds. , 2017, , 76-105.		24
51	Formation of layers of methane in the atmosphere of Mars after surface release. Geophysical Research Letters, 2016, 43, 1868-1875.	4.0	20
52	Optical and radiometric models of the NOMAD instrument part II: the infrared channels - SO and LNO. Optics Express, 2016, 24, 3790.	3.4	25
53	Expected performances of the NOMAD/ExoMars instrument. Planetary and Space Science, 2016, 124, 94-104.	1.7	31
54	Optical and radiometric models of the NOMAD instrument part I: the UVIS channel. Optics Express, 2015, 23, 30028.	3.4	26

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55	A solar escalator on Mars: Selfâ€lifting of dust layers by radiative heating. Geophysical Research Letters, 2015, 42, 7319-7326.	4.0	38
56	NOMAD spectrometer on the ExoMars trace gas orbiter mission: part 1â€"design, manufacturing and testing of the infrared channels. Applied Optics, 2015, 54, 8494.	2.1	58
57	Science objectives and performances of NOMAD, a spectrometer suite for the ExoMars TGO mission. Planetary and Space Science, 2015, 119, 233-249.	1.7	77
58	Observations of near-surface fog at the Phoenix Mars landing site. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	20
59	Studying methane and other trace species in the Mars atmosphere using a SOIR instrument. Planetary and Space Science, 2011, 59, 292-298.	1.7	19
60	Assessment of a 2016 mission concept: The search for trace gases in the atmosphere of Mars. Planetary and Space Science, 2011, 59, 284-291.	1.7	49
61	Simulating observed boundary layer clouds on Mars. Geophysical Research Letters, 2010, 37, .	4.0	36
62	Mars Water-Ice Clouds and Precipitation. Science, 2009, 325, 68-70.	12.6	173
63	A global stratospheric bromine monoxide climatology based on the BASCOE chemical transport model. Atmospheric Chemistry and Physics, 2009, 9, 831-848.	4.9	65
64	4D-Var assimilation of MIPAS chemical observations: ozone and nitrogen dioxide analyses. Atmospheric Chemistry and Physics, 2008, 8, 6169-6187.	4.9	84
65	A 3D-CTM with detailed online PSC-microphysics: analysis of the Antarctic winter 2003 by comparison with satellite observations. Atmospheric Chemistry and Physics, 2007, 7, 1755-1772.	4.9	33
66	A global OClO stratospheric layer discovered in GOMOS stellar occultation measurements. Geophysical Research Letters, 2006, 33, .	4.0	17
67	Waves in the sandpile model on fractal lattices. Physica A: Statistical Mechanics and Its Applications, 2001, 292, 43-54.	2.6	8
68	Dissipative Abelian sandpiles and random walks. Physical Review E, 2001, 63, 030301.	2.1	6
69	Sandpiles on a Sierpinski gasket. Physica A: Statistical Mechanics and Its Applications, 1998, 256, 533-546.	2.6	20
70	1fnoise in the Bak-Sneppen model. Physical Review E, 1996, 53, 4723-4728.	2.1	7
71	Renormalization of the anisotropic XY model. Journal of Magnetism and Magnetic Materials, 1995, 140-144, 1621-1622.	2.3	2