Mehdi Benna

List of Publications by Year
in descending order

133 papers	10,981 citations	38742 50 h-index	30087 103 g-index
137 all docs	137 docs citations	137 times ranked	5675 citing authors

#	Article	IF	Citations
1	A lingering local exosphere created by a gas plume of a lunar lander. Icarus, 2022, 376, 114857.	2.5	1
2	The Origins of Longâ€Term Variability in Martian Upper Atmospheric Densities. Journal of Geophysical Research: Space Physics, 2022, 127, .	2.4	6
3	MAVEN/NGIMS wind observations in the martian thermosphere during the 2018 planet encircling dust event. Icarus, 2022, 382, 115006.	2.5	2
4	Carbon Ion Fluxes at Mars: First Results of Tailward Flows From MAVENâ€STATIC. Journal of Geophysical Research: Space Physics, 2022, 127, .	2.4	3
5	Volatile interactions with the lunar surface. Chemie Der Erde, 2022, 82, 125858.	2.0	26
6	Neutral Composition and Horizontal Variations of the Martian Upper Atmosphere From MAVEN NGIMS. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	4
7	Rate coefficients for the reactions of CO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e4795" altimg="si391.svg"><mml:msubsup><mml:mrow /><mml:mrow><mml:mn>2</mml:mn></mml:mrow><mml:mrow><mml:mo>+</mml:mo></mml:mrow></mml:msubsup></mml:math> O: Lessons from MAVEN at Mars. Icarus, 2021, 358, 114186.	2.5	15
8	Escape of CO₂⁺ and Other Heavy Minor Ions From the Ionosphere of Mars. Journal of Geophysical Research: Space Physics, 2021, 126, e2020JA028608.	2.4	9
9	Tidal Effects on the Longitudinal Structures of the Martian Thermosphere and Topside Ionosphere Observed by MAVEN. Journal of Geophysical Research: Space Physics, 2021, 126, e2020JA028562.	2.4	12
10	Dust Stormâ€Enhanced Gravity Wave Activity in the Martian Thermosphere Observed by MAVEN and Implication for Atmospheric Escape. Geophysical Research Letters, 2021, 48, e2020GL092095.	4.0	33
11	Volatiles and Refractories in Surface-Bounded Exospheres in the Inner Solar System. Space Science Reviews, 2021, 217, 61.	8.1	12
12	Water Group Exospheres and Surface Interactions on the Moon, Mercury, and Ceres. Space Science Reviews, 2021, 217, 1.	8.1	21
13	Seasonal and Dustâ€Related Variations in the Dayside Thermospheric and Ionospheric Compositions of Mars Observed by MAVEN/NGIMS. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006926.	3.6	8
14	On the Altitude Patterns of Photoâ€Chemicalâ€Equilibrium in the Martian Ionosphere: A Special Role for Electron Temperature. Journal of Geophysical Research: Space Physics, 2021, 126, .	2.4	3
15	In Situ Measurements of Thermal Ion Temperature in the Martian Ionosphere. Journal of Geophysical Research: Space Physics, 2021, 126, e2021JA029531.	2.4	17
16	Ionization Efficiency in the Dayside Ionosphere of Mars: Structure and Variability. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006923.	3.6	5
17	Mars Dust Storm Effects in the Ionosphere and Magnetosphere and Implications for Atmospheric Carbon Loss. Journal of Geophysical Research: Space Physics, 2020, 125, no.	2.4	23
18	Cosmic dust fluxes in the atmospheres of Earth, Mars, and Venus. Icarus, 2020, 335, 113395.	2.5	53

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19	Effects of the 10 September 2017 Solar Flare on the Density and Composition of the Thermosphere of Mars. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA028518.	2.4	5
20	Hydrogen escape from Mars is driven by seasonal and dust storm transport of water. Science, 2020, 370, 824-831.	12.6	66
21	First Detection of Kilometerâ€Scale Density Irregularities in the Martian Ionosphere. Geophysical Research Letters, 2020, 47, e2020GL090906.	4.0	7
22	Subsolar Electron Temperatures in the Lower Martian Ionosphere. Journal of Geophysical Research: Space Physics, 2020, 125, e2019JA027597.	2.4	6
23	Constantly forming sporadic E-like layers and rifts in the Martian ionosphere and their implications for Earth. Nature Astronomy, 2020, 4, 486-491.	10.1	14
24	A prospective microwave plasma source for <i>in situ</i> spaceflight applications. Journal of Analytical Atomic Spectrometry, 2020, 35, 2740-2747.	3.0	8
25	The Modulation of Solar Wind Hydrogen Deposition in the Martian Atmosphere by Foreshock Phenomena. Journal of Geophysical Research: Space Physics, 2019, 124, 7086-7097.	2.4	9
26	Mars Upper Atmospheric Responses to the 10 September 2017 Solar Flare: A Global, Timeâ€Dependent Simulation. Geophysical Research Letters, 2019, 46, 9334-9343.	4.0	19
27	In Situ Electron Density From Active Sounding: The Influence of the Spacecraft Wake. Geophysical Research Letters, 2019, 46, 10250-10256.	4.0	0
28	Importance of Ambipolar Electric Field in Driving Ion Loss From Mars: Results From a Multifluid MHD Model With the Electron Pressure Equation Included. Journal of Geophysical Research: Space Physics, 2019, 124, 9040-9057.	2.4	27
29	The Statistical Characteristics of Smallâ€Scale Ionospheric Irregularities Observed in the Martian Ionosphere. Journal of Geophysical Research: Space Physics, 2019, 124, 5874-5893.	2.4	8
30	Ionâ€Neutral Coupling in the Upper Atmosphere of Mars: A Dominant Driver of Topside Ionospheric Structure. Journal of Geophysical Research: Space Physics, 2019, 124, 3786-3798.	2.4	18
31	Ambipolar Electric Field in the Martian Ionosphere: MAVEN Measurements. Journal of Geophysical Research: Space Physics, 2019, 124, 4518-4524.	2.4	18
32	Seasonal Variability of Deuterium in the Upper Atmosphere of Mars. Journal of Geophysical Research: Space Physics, 2019, 124, 2152-2164.	2.4	13
33	Lunar soil hydration constrained by exospheric water liberated by meteoroid impacts. Nature Geoscience, 2019, 12, 333-338.	12.9	81
34	Traveling Ionospheric Disturbances at Mars. Geophysical Research Letters, 2019, 46, 4554-4563.	4.0	13
35	Mars's Dayside Upper Ionospheric Composition Is Affected by Magnetic Field Conditions. Journal of Geophysical Research: Space Physics, 2019, 124, 3100-3109.	2.4	26
36	First In Situ Evidence of Mars Nonthermal Exosphere. Geophysical Research Letters, 2019, 46, 4144-4150.	4.0	7

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37	Atmospheric Tides at High Latitudes in the Martian Upper Atmosphere Observed by MAVEN and MRO. Journal of Geophysical Research: Space Physics, 2019, 124, 2943-2953.	2.4	24
38	MAVEN Case Studies of Plasma Dynamics in Lowâ€Altitude Crustal Magnetic Field at Mars 1: Dayside Ion Spikes Associated With Radial Crustal Magnetic Fields. Journal of Geophysical Research: Space Physics, 2019, 124, 1239-1261.	2.4	6
39	MAVEN/NGIMS Thermospheric Neutral Wind Observations: Interpretation Using the Mâ€GITM General Circulation Model. Journal of Geophysical Research E: Planets, 2019, 124, 3283-3303.	3.6	20
40	Global circulation of Marsâ€™ upper atmosphere. Science, 2019, 366, 1363-1366.	12.6	20
41	Thermospheric Expansion Associated With Dust Increase in the Lower Atmosphere on Mars Observed by MAVEN/NGIMS. Geophysical Research Letters, 2018, 45, 2901-2910.	4.0	27
42	Simulations of lunar exospheric water events from meteoroid impacts. Planetary and Space Science, 2018, 162, 148-156.	1.7	9
43	First Evidence of Persistent Nighttime Temperature Structures in the Neutral Thermosphere of Mars. Geophysical Research Letters, 2018, 45, 8819-8825.	4.0	7
44	Variability of Martian Turbopause Altitudes. Journal of Geophysical Research E: Planets, 2018, 123, 2939-2957.	3.6	30
45	Thermal Structure of the Martian Upper Atmosphere From MAVEN NGIMS. Journal of Geophysical Research E: Planets, 2018, 123, 2842-2867.	3.6	91
46	Loss of the Martian atmosphere to space: Present-day loss rates determined from MAVEN observations and integrated loss through time. Icarus, 2018, 315, 146-157.	2.5	216
47	MAVEN Observations of Solar Windâ€Driven Magnetosonic Waves Heating the Martian Dayside Ionosphere. Journal of Geophysical Research: Space Physics, 2018, 123, 4129-4149.	2.4	40
48	Martian Electron Temperatures in the Subsolar Region: MAVEN Observations Compared to a Oneâ€Dimensional Model. Journal of Geophysical Research: Space Physics, 2018, 123, 5960-5973.	2.4	21
49	Ionizing Electrons on the Martian Nightside: Structure and Variability. Journal of Geophysical Research: Space Physics, 2018, 123, 4349-4363.	2.4	35
50	Significant Space Weather Impact on the Escape of Hydrogen From Mars. Geophysical Research Letters, 2018, 45, 8844-8852.	4.0	29
51	Observations and Modeling of the Mars Lowâ€Altitude Ionospheric Response to the 10 September 2017 Xâ€Class Solar Flare. Geophysical Research Letters, 2018, 45, 7382-7390.	4.0	30
52	The Mars Topside Ionosphere Response to the X8.2 Solar Flare of 10 September 2017. Geophysical Research Letters, 2018, 45, 8005-8013.	4.0	38
53	Effects of a Solar Flare on the Martian Hot O Corona and Photochemical Escape. Geophysical Research Letters, 2018, 45, 6814-6822.	4.0	19
54	Longitudinal structures in Mars' upper atmosphere as observed by MAVEN/NGIMS. Journal of Geophysical Research: Space Physics, 2017, 122, 1258-1268.	2.4	32

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55	MAVEN and the total electron content of the Martian ionosphere. Journal of Geophysical Research: Space Physics, 2017, 122, 3526-3537.	2.4	12
56	Photochemical escape of oxygen from Mars: First results from MAVEN in situ data. Journal of Geophysical Research: Space Physics, 2017, 122, 3815-3836.	2.4	106
57	Nightside ionosphere of Mars: Composition, vertical structure, and variability. Journal of Geophysical Research: Space Physics, 2017, 122, 4712-4725.	2.4	46
58	Unique, nonâ€Earthlike, meteoritic ion behavior in upper atmosphere of Mars. Geophysical Research Letters, 2017, 44, 3066-3072.	4.0	30
59	MAVEN NGIMS observations of atmospheric gravity waves in the Martian thermosphere. Journal of Geophysical Research: Space Physics, 2017, 122, 2310-2335.	2.4	88
60	He bulge revealed: He and CO₂ diurnal and seasonal variations in the upper atmosphere of Mars as detected by MAVEN NGIMS. Journal of Geophysical Research: Space Physics, 2017, 122, 2564-2573.	2.4	52
61	Marsâ€™ atmospheric history derived from upper-atmosphere measurements of ³⁸ Ar/³⁶ Ar. Science, 2017, 355, 1408-1410.	12.6	183
62	Initial SAM calibration gas experiments on Mars: Quadrupole mass spectrometer results and implications. Planetary and Space Science, 2017, 138, 44-54.	1.7	84
63	The structure and variability of Mars dayside thermosphere from MAVEN NGIMS and IUVS measurements: Seasonal and solar activity trends in scale heights and temperatures. Journal of Geophysical Research: Space Physics, 2017, 122, 1296-1313.	2.4	124
64	MAVEN observations of dayside peak electron densities in the ionosphere of Mars. Journal of Geophysical Research: Space Physics, 2017, 122, 891-906.	2.4	33
65	On the Origins of Mars' Exospheric Nonthermal Oxygen Component as Observed by MAVEN and Modeled by HELIOSARES. Journal of Geophysical Research E: Planets, 2017, 122, 2401-2428.	3.6	27
66	MAVEN Observations of Ionospheric Irregularities at Mars. Geophysical Research Letters, 2017, 44, 10,845.	4.0	16
67	Ion Densities in the Nightside Ionosphere of Mars: Effects of Electron Impact Ionization. Geophysical Research Letters, 2017, 44, 11248-11256.	4.0	64
68	Variations of the Martian plasma environment during the ICME passage on 8 March 2015: A timeâ€dependent MHD study. Journal of Geophysical Research: Space Physics, 2017, 122, 1714-1730.	2.4	40
69	Global distribution and parameter dependences of gravity wave activity in the Martian upper thermosphere derived from MAVEN/NGIMS observations. Journal of Geophysical Research: Space Physics, 2017, 122, 2374-2397.	2.4	66
70	Sources of Ionospheric Variability at Mars. Journal of Geophysical Research: Space Physics, 2017, 122, 9670-9684.	2.4	40
71	Simultaneous observations of atmospheric tides from combined in situ and remote observations at Mars from the MAVEN spacecraft. Journal of Geophysical Research E: Planets, 2016, 121, 594-607.	3.6	48
72	Photoelectrons and solar ionizing radiation at Mars: Predictions versus MAVEN observations. Journal of Geophysical Research: Space Physics, 2016, 121, 8859-8870.	2.4	33

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73	Evaluation of the robustness of chromatographic columns in a simulated highly radiative Jovian environment. Planetary and Space Science, 2016, 122, 38-45.	1.7	4
74	Understanding temporal and spatial variability of the lunar helium atmosphere using simultaneous observations from LRO, LADEE, and ARTEMIS. Icarus, 2016, 273, 45-52.	2.5	25
75	Structure and composition of the neutral upper atmosphere of Mars from the MAVEN NGIMS investigation. Geophysical Research Letters, 2015, 42, 8951-8957.	4.0	168
76	MAVEN observations of solar wind hydrogen deposition in the atmosphere of Mars. Geophysical Research Letters, 2015, 42, 8901-8909.	4.0	78
77	First measurements of composition and dynamics of the Martian ionosphere by MAVEN's Neutral Gas and Ion Mass Spectrometer. Geophysical Research Letters, 2015, 42, 8958-8965.	4.0	142
78	Detections of lunar exospheric ions by the LADEE neutral mass spectrometer. Geophysical Research Letters, 2015, 42, 5162-5169.	4.0	42
79	Metallic ions in the upper atmosphere of Mars from the passage of comet C/2013 A1 (Siding Spring). Geophysical Research Letters, 2015, 42, 4670-4675.	4.0	45
80	Multifluid MHD study of the solar wind interaction with Mars' upper atmosphere during the 2015 March 8th ICME event. Geophysical Research Letters, 2015, 42, 9103-9112.	4.0	54
81	Changes in the thermosphere and ionosphere of Mars from Viking to MAVEN. Geophysical Research Letters, 2015, 42, 9071-9079.	4.0	20
82	Ionopauseâ€like density gradients in the Martian ionosphere: A first look with MAVEN. Geophysical Research Letters, 2015, 42, 8885-8893.	4.0	42
83	Improving solar wind modeling at Mercury: Incorporating transient solar phenomena into the WSAâ€ENLIL model with the Cone extension. Journal of Geophysical Research: Space Physics, 2015, 120, 5667-5685.	2.4	16
84	Water and water ions in the Martian thermosphere/ionosphere. Geophysical Research Letters, 2015, 42, 8977-8985.	4.0	56
85	MHD model results of solar wind interaction with Mars and comparison with MAVEN plasma observations. Geophysical Research Letters, 2015, 42, 9113-9120.	4.0	58
86	Variability of helium, neon, and argon in the lunar exosphere as observed by the LADEE NMS instrument. Geophysical Research Letters, 2015, 42, 3723-3729.	4.0	79
87	Comparison of model predictions for the composition of the ionosphere of Mars to MAVEN NGIMS data. Geophysical Research Letters, 2015, 42, 8966-8976.	4.0	25
88	MAVEN and the Mars Initial Reference Ionosphere model. Geophysical Research Letters, 2015, 42, 9080-9086.	4.0	15
89	The Neutral Gas and Ion Mass Spectrometer on the Mars Atmosphere and Volatile Evolution Mission. Space Science Reviews, 2015, 195, 49-73.	8.1	229
90	The Mars Atmosphere and Volatile Evolution (MAVEN) Mission. Space Science Reviews, 2015, 195, 3-48.	8.1	563

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91	MAVEN observations of the response of Mars to an interplanetary coronal mass ejection. Science, 2015, 350, aad0210.	12.6	166
92	Early MAVEN Deep Dip campaign reveals thermosphere and ionosphere variability. Science, 2015, 350, aad0459.	12.6	90
93	The Lunar Atmosphere and Dust Environment Explorer Mission. Space Science Reviews, 2014, 185, 3-25.	8.1	66
94	Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1245267.	12.6	323
95	A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1242777.	12.6	687
96	Mineralogy of a Mudstone at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1243480.	12.6	508
97	Marsâ€™ Surface Radiation Environment Measured with the Mars Science Laboratoryâ€™s Curiosity Rover. Science, 2014, 343, 1244797.	12.6	475
98	In Situ Radiometric and Exposure Age Dating of the Martian Surface. Science, 2014, 343, 1247166.	12.6	224
99	Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1244734.	12.6	246
100	Mercuryâ€™s Weather-Beaten Surface: Understanding Mercury in the Context of Lunar and Asteroidal Space Weathering Studies. Space Science Reviews, 2014, 181, 121-214.	8.1	108
101	The Neutral Mass Spectrometer on the Lunar Atmosphere and Dust Environment Explorer Mission. Space Science Reviews, 2014, 185, 27-61.	8.1	55
102	Analytical techniques for retrieval of atmospheric composition with the quadrupole mass spectrometer of the Sample Analysis at Mars instrument suite on Mars Science Laboratory. Planetary and Space Science, 2014, 96, 99-113.	1.7	20
103	X-ray Diffraction Results from Mars Science Laboratory: Mineralogy of Rocknest at Gale Crater. Science, 2013, 341, 1238932.	12.6	327
104	Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow. Science, 2013, 341, 1239505.	12.6	280
105	Abundance and Isotopic Composition of Gases in the Martian Atmosphere from the Curiosity Rover. Science, 2013, 341, 263-266.	12.6	327
106	Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover. Science, 2013, 341, 1238937.	12.6	367
107	Isotope Ratios of H, C, and O in CO ₂ and H ₂ O of the Martian Atmosphere. Science, 2013, 341, 260-263.	12.6	241
108	Martian Fluvial Conglomerates at Gale Crater. Science, 2013, 340, 1068-1072.	12.6	326

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109	Solar wind forcing at Mercury: WSAâ€ENLIL model results. Journal of Geophysical Research: Space Physics, 2013, 118, 45-57.	2.4	46
110	The Petrochemistry of Jake_M: A Martian Mugearite. Science, 2013, 341, 1239463.	12.6	134
111	Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. Science, 2013, 341, 1238670.	12.6	215
112	Low Upper Limit to Methane Abundance on Mars. Science, 2013, 342, 355-357.	12.6	103
113	The Sample Analysis at Mars Investigation and Instrument Suite. Space Science Reviews, 2012, 170, 401-478.	8.1	435
114	MESSENGER and Mariner 10 flyby observations of magnetotail structure and dynamics at Mercury. Journal of Geophysical Research, 2012, 117, .	3.3	86
115	Metallic species, oxygen and silicon in the lunar exosphere: Upper limits and prospects for LADEE measurements. Journal of Geophysical Research, 2012, 117, .	3.3	53
116	Higher order parametric excitation modes for spaceborne quadrupole mass spectrometers. Review of Scientific Instruments, 2011, 82, 125109.	1.3	12
117	The space environment of Mercury at the times of the second and third MESSENGER flybys. Planetary and Space Science, 2011, 59, 2066-2074.	1.7	28
118	Electron transport and precipitation at Mercury during the MESSENGER flybys: Implications for electron-stimulated desorption. Planetary and Space Science, 2011, 59, 2026-2036.	1.7	30
119	Limits to Mercury's magnesium exosphere from MESSENGER second flyby observations. Planetary and Space Science, 2011, 59, 1992-2003.	1.7	36
120	Constraints on Mercuryâ€™s Na exosphere: Combined MESSENGER and ground-based data. Icarus, 2011, 211, 21-36.	2.5	32
121	Monte Carlo modeling of sodium in Mercuryâ€™s exosphere during the first two MESSENGER flybys. Icarus, 2010, 209, 63-74.	2.5	51
122	Modeling of the magnetosphere of Mercury at the time of the first MESSENGER flyby. Icarus, 2010, 209, 3-10.	2.5	67
123	MESSENGER Observations of Extreme Loading and Unloading of Mercuryâ€™s Magnetic Tail. Science, 2010, 329, 665-668.	12.6	172
124	MESSENGER Observations of Magnetic Reconnection in Mercuryâ€™s Magnetosphere. Science, 2009, 324, 606-610.	12.6	234
125	MESSENGER and Venus Express observations of the solar wind interaction with Venus. Geophysical Research Letters, 2009, 36, .	4.0	37
126	Space environment of Mercury at the time of the first MESSENGER flyby: Solar wind and interplanetary magnetic field modeling of upstream conditions. Journal of Geophysical Research, 2009, 114, .	3.3	37

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127	MESSENGER observations of Mercury's magnetosphere during northward IMF. Geophysical Research Letters, 2009, 36, .	4.0	55
128	Sodiumâ€ion pickup observed above the magnetopause during MESSENGER's first Mercury flyby: Constraints on neutral exospheric models. Geophysical Research Letters, 2009, 36, .	4.0	26
129	Modeling the response of the induced magnetosphere of Venus to changing IMF direction using MESSENGER and Venus Express observations. Geophysical Research Letters, 2009, 36, .	4.0	9
130	Mercury's Magnetosphere After MESSENGER's First Flyby. Science, 2008, 321, 85-89.	12.6	166
131	Multi-fluid model of comet 1P/Halley. Planetary and Space Science, 2007, 55, 1031-1043.	1.7	18
132	A Multiscale Central Difference Scheme Applied to Magnetohydrodynamic Simulations of Cometary Atmospheres. Astrophysical Journal, 2004, 617, 656-666.	4.5	6
133	A priori information required for a two or three dimensional reconstruction of the internal structure of a comet nucleus (consert experiment). Advances in Space Research, 2002, 29, 715-724.	2.6	10